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Mr. Lowthian Bell's Journey.

As will be seen by the following letter from Mr. T. F. WITHERBEE, Mr. BELL has already visited the Lake Champlain region, and inspected the leading mines and furnaces there. According to a private letter just received from him, he is on his way to Lake Superior. His reception, he writes, has been everywhere most gratifying to him; and we are quite safe in adding that his presence has been everywhere equally gratifying to those who have had the honor and pleasure of entertaining him. The public reputation which he has achieved would have insured him a welcome, even in the absence of the social qualities which invariably transform his admirers, upon personal intercourse, into his friends. One of Mr. BELL's peculiarities is the friendly frankness with which he both inquires and criticises, concerning the details of practice at the works he visits. We look forward, therefore, with much pleasure to the prospect of hearing, at the Hazleton meeting of the Institute of Mining Engineers, on the 27th instant, his views concerning the American iron industry. We may be sure that he will neither flatter us nor withhold any praise which he thinks due, and that the suggestions he may make will be of the highest value.

We append Mr. WITHERBEE's letter:

TO THE EDITOR: SIR—Mr. THOS. WHITWELL arrived here September 30th, and Mr. I. LOWTHIAN BELL, Mr. CHAS. BELL, and Mr. CHADWICK and Son the day following.

Mr. WHITWELL inspected the Bay State Iron Company's furnaces and the Cedar Point Iron Company's furnace the same afternoon of his arrival.

October 1st was spent in visiting the mines of the Port Henry Iron Ore Company and WITHERBEES, SHERMAN & Co. Mr. BELL and party were expected Sept. 30, as per telegrams received, but were delayed at Lake George one day. Upon their arrival, at 2 P. M., October 1st, they were driven to Cedar Point, and took an extra train on Lake Champlain and Moriah Railroad, arriving at Mineville, 2:40, P. M.

The remainder of the afternoon was spent in inspecting the mines and machinery, including the rock-drills, which were in operation. After selecting samples of ore and other minerals, the party returned to Port Henry.

Friday, October 2d, Mr. BELL and SON visited the Bay State Works and the Cedar Point Iron Company's furnace, accompanied at the latter by Mr. WHITWELL.

The party, excepting Mr. CHADWICK and SON, reinforced by Mr. W. T. FOOTE, Superintendent B. S. I. works, were then driven to Crownpoint, to examine the furnaces of the Crownpoint Iron Company, arriving there during a severe rain storm.

An hour and a half was spent in looking over the works under the guidance of GEO. JAMME, Esq., Supt.

Messrs. BELL and WHITWELL, at 1½ P. M. took steamboat at Crownpoint for Montreal, picking up the remainder of the party at Port Henry.

Much surprise was expressed at the magnitude and purity of the ore deposits at Moriah.

Members of the Institute of Mining Engineers, who have gone over the route above described, will probably admit that your injunction "not to let them lose any time," was obeyed.

Our only regret is, that their route ahead would not admit of a more careful survey.

The simultaneous visit of Messrs. BELL and WHITWELL was entirely accidental, but none the less enjoyable and instructive.

Truly yours, T. F. WITHERBEE.

The Union Pacific Rolling Mills at Laramie.

It has been the determination of the Union Pacific Railroad Company, for a number of months, to erect mills for the purpose of re-rolling the iron of that road. Evanston, Rawlins, Laramie and Cheyenne were all talked of, their advantages canvassed, and the city of Laramie at last determined upon as the most central and advantageous point. With the Union Pacific Railroad Company to determine to do a thing, is to go at it at once and in earnest.

Mr. JOSEPH RICHARDSON, of New York City, one of the largest stockholders and a director of the Union Pacific Company, as well as the principal owner of the Utah Northern Railroad, came West to take charge of the entire work. His knowledge, energy and untiring perseverance were well known, his ability to perform all he attempts has never been disputed, and the push that characterizes the life-work of the man, caused him to be selected to overlook this important work.

Ground was broken on Saturday, Sept. 19, with about fifteen hands at work, sinking for the foundation and erecting derricks for moving the huge stones that go into this structure.

The mill will be of stone, with slate roof from the Salt Lake quarries, and 230 feet long by 120 feet wide. This does not include fuel houses and other necessary buildings. The estimated cost of the works will be $500,000, but it will undoubtedly exceed that sum.

There will be one engine of 600 horse-power, and six auxiliary engines on the same floor. The entire works will be supplied with water from a 12-inch main, from 125 feet head. This water was brought from a spring on the company's land, three miles distant. The water will be conveyed in iron pipes prepared, inside and out, with an indestructible cement.

The mill will have a capacity of 120 tons per day, and give employment directly and indirectly to more than 100 men.

In connection with its own work this mill will re-roll the rails of the Denver and Kansas Pacific roads; the Utah Northern, Southern and Central; the narrow gauge roads of the mountain country as well as the iron of the roads of the Pacific slope.

Mr. RICHARDSON assured us that this work will all be completed and ready for work January 1, 1875. But a little over four months to erect so important a structure, place its machinery there, and be ready for work, will prove what we have said of the manager to be true.

This industry to Laramie will be a most important one, and is fully appreciated by its citizens. Albany County, of which Laramie is the county seat, has generously exempted all their mills and works from taxation for ten years.—*St. Louis Railway Register.*

The Sand Blast in Mining.

In a paper read before the British Association, Mr. NEWTON said: When effects on patterns of a delicate nature are desired, and only small quantities of material are to be removed, the blast of air from an ordinary rotary fan is used as the propelling medium. Sand driven by an air blast of the pressure of four inches of water, will completely grind or de-polish the surface of glass in ten seconds. If the glass is covered by a stencil of paper or lace, or by a design drawn in any tough elastic substance, such as half-dried oil, paint or gum, a picture will be engraved on the surface. Photographic copies in bi-chromated gelatine, from delicate engravings, have been thus faithfully reproduced on glass. In photographic pictures in gelatine, taken from nature, the lights and shadows produce films of gelatine of different degrees of thickness. A carefully regulated sand-blast will act upon the glass beneath these films more or less powerfully in proportion to the thickness of these films, and the half-tones or gradations of light and shade are thus produced on the glass. If the sand-blast be applied to a cake of resin on which a picture has been produced by photography in gelatine, or drawn by hand in oil or gum, the bare parts of the surface may be cut away to any desired depth. The lines left in relief will be well supported, their base being broader than their top, and there being no under-cutting, as is apt to occur in etching on metal with acid, an electrotype from this matrix may be made and can be printed from in an ordinary press.

The process had also been used for cleaning the exterior of buildings, and it was intended some fine day to polish up St. Paul's and Westminster Abbey. This could be done very rapidly and without injuring the sharp lines or edges of the masonry.

A number of beautiful and curious specimens of glass, marble, slate, granite, etc., operated on by the process, were exhibited during the reading of the paper, and excited the most intense interest. Among these was a plate of glass about half an inch thick, which had been pierced through in about ten minutes, and also a large flat file, in which a slit about four inches long and three-eighths of an inch broad had been cut by the sand-blast.

Mr. NEWTON stated, that small shot or grains of cast iron, of about one twenty-sixth of an inch diameter, in place of the sand, have been found to cut granite more rapidly; probably because they are not broken by the shock, and the whole force of the blow is thus expended in disintegrating the stone, instead of being partly wasted in crushing the grains of sand.

The following suggestive paragraph on the same subject we take from a prospectus of a company projected to work the invention: Although the sand-blast has not yet been practically applied to quarrying for slate, either for slabs or roofing slates, it is very confidently believed (from experiments that have recently been made) that the invention may be very advantageously applied for those purposes; and not only will there be a great saving in labor, but a large proportion of the blasting required to get the slate out of the quarry may be dispensed with, and a great deal of the waste of material which now takes place may be avoided. As this waste frequently amounts in weight to as much as nine times the weight of the marketable article produced, it will be seen that there is a wide margin for the profitable use of the invention, and for preventing waste. The process is also applicable to quarrying stone and for cutting hard rock in tunneling in the construction of railways. It is believed that in tunneling operations, in many kinds of rocks, a large proportion of the blasting now required may be dispensed with by making use of the sand blast.—*Mining and Scientific Press.*

Process of Spelter Production, as Practised at Carondelet, Missouri, with Comparisons.*

By JNO. W. PACK.

AT present the manufacture of metallic zinc, or spelter, in Missouri, is carried on only at the establishments located at Carondelet, or South St. Louis. Although the development of the industry has not yet reached that fullness which it has attained elsewhere in the United States, still the commanding advantages of position of these establishments are so evident that the prospective importance and magnitude of spelter manufacture in this State, and especially at this locality, can hardly be doubted. A study of the chemical and technical aspects of the business of these points cannot be without interest to the metallurgist as well to the capitalist. I have endeavored to investigate, as far as was practicable within the limits of a paper of this character, some of the problems connected with this industry, at the same time making a few comparisons of the results attained at some of the Carondelet works with those of other establishments with regard to which information could be obtained. In the prosecution of these studies I have been kindly aided by the managers of Carondelet establishments, and by Prof. CHAS. P. WILLIAMS, Director of Rolla School of Mines. To the latter I am especially indebted for assistance in regard to methods of analysis. To all these gentlemen I return my thanks for their valuable aid. Other sources of information will be duly credited in their proper places.

ORES.

The ores treated at these establishments are brought, either by the Iron Mountain railroad from the vicinity of Potosi, in the southeastern part of the State, or by the Atlantic and Pacific railroad from the mining regions of Newton and Jasper Counties, in the southwestern part of the State. They consist chiefly of hydrous silicate, or calamine, with variable quantities of blende and some smithsonite. At the localities mentioned the zinc ores have been rather the incidental products of lead mining, than the objects of direct exploitation. For a number of years the richest zinc ores were cast aside as unproductive vein-stone, because there was no near market for them.

The erection of these zinc works and the prospective establishment of others, together with the utilization of the blende ores of the Southwest, at the establishments of La Salle, Ill., has created a rapidly increasing demand for such ores, till they now form no inconsiderable portion of the valuable production of the lead regions of Missouri.

No full analysis of the raw ore has been made, but various partial analyses seem to indicate that the ores from the Southwest are much freer from antimony than those from the southeastern section of the State. The presence of manganese in the ores from the latter section, and its almost total absence from those of the Southwest, is noteworthy.

The ores of the southeast region, notwithstanding the presence of antimony and arsenic, are of a very fine quality, and compare closely and favorably with those from the well-known Saucon Valley used at the Lehigh Zinc Works, Bethlehem, Pa.

The ores are roasted and calcined in kilns possessing no special features of construction. They are thus largely desulphurized and dearsenized. A sample of the calcined ore, after crushing, gave, on analysis, the following composition:

	I.	II.
Silicic acid	29.447	10.245
Oxide zinc	70.039	75 300
Ferric oxide	.527	2.014
Brown oxide manganese	none	1.642
Lime	.285	4.385
Magnesia	.084	3.320
Arsenious acid	.540	trace
Antimonic oxide	trace	.280
Oxides, lead and copper	trace	trace
Sulphur	.349	trace
Carbonic acid	trace	3.320

No I. is the roasted ore used at the Martindale establishment, and is chiefly furnished by the Granby mines.

No. II. is the mean of two closely agreeing analyses, by Mr. G. A. DUNCAN (of this institution) and myself, and is of the mixed ores of the two sections of the State; the southwestern ores, however, predominating.

The preponderance of the hydrous silicate in the ores from Granby is further illustrated by an analysis of a chance specimen taken from a car load of the ores, and analyzed by Mr. C. R. WINTERS, in this laboratory, which gave silicic acid 25.489 per cent.; oxide of zinc, 66.813 per cent.; oxide iron and alumina, 1.114 per cent.; lime, trace; combined water, 7.502 per cent.; corresponding closely to the formula 2 (ZnO) $Si O_2$ HO.

FUEL.

The fuel employed is bituminous coal, brought from the Illinois coal basin, not more than ten miles distant from the works. It is transported to a point below East St. Louis, and is thence ferried across the Mississippi river to the works. It is sorted by screening, the finer material, or slack, being employed for reduction, and the lump coal and coarser fragments for firing. The slack shows the following composition:

	I.	II.	Mean.
Moisture expelled at 102° C.	5.172	4.351	4.762
Volatile matter	26.896	27.057	26.977
Fixed carbon	51.322	52.621	51.971
Ash	16.610	15.971	16.290
	100.000	100.000	100.000

* A paper read before the American Institute of Mining Engineers at the St. Louis meeting, May, 1874.

CLAY.

The clay is obtained at Cheltenham, St. Louis County, twelve miles west from Carondelet, on the line of the Missouri Pacific Railroad. It has an excellent reputation for refractory qualities, and is extensively manufactured into tile and fire-brick. Its reputation is borne out by the following analysis, which is the mean of two closely agreeing results, of a dried sample of the quality used at the zinc works:

	I.	II.	III.
Silicic acid	56.137	56.0	52.0
Alumina	32.515	26.0	25.0
Ferric oxide	1.020	—	—
Lime	1.603	—	—
Magnesia	—	2.0	trace
Alkalies	—	—	—
Combined Water	10.570	14.0	12.6
Sand	—	2 0	9.8

No. I. is the mean of two analyses of the Cheltenham clay; and No. II. and III. are introduced for comparison, both being Belgian clays, analyzed by COSTER. In No. I. it was not deemed necessary to distinguish between the silica of the plastic portion and the free silica and that of the intermixed silicates. Another sample from the same locality, analyzed some time since in this laboratory by Mr. C. R. WINTERS, showed silicic acid (of plastic portion), 39.157 per cent.; silica in admixture, 13.927 per cent. In this latter sample there were but traces of the alkalies, and 1.342 per cent. of magnesia.

TO BE CONTINUED.

The Silver, Lead and Copper Mines of Carupano, Venezuela.

THIS mining property is situated in the State of Cumana, in Venezuela, and known as the Mines of Carupano. They are in a line of mountains running SE. and NW., parallel with the sea coast, in long. 63.20 of Greenwich and lat. 10.36. The distance of the first mine, called the Encanto (enchanted), from the Port of Carupano is 4½ miles. From this mine, involving the whole line of mountains for six miles westwardly to the River "Rivilla," are found the different veins of ore. This group of mountains, of various elevations, from 2,000 to 2,500 feet above the level of the sea, is divided at but short intervals by the veins of mineral running NNE. and SSW. This property is bounded northerly by the Valley of Carupano, stretching to the sea; southwesterly by the "River Rivilla;" easterly by the "Stone River" ("Quebrada de Piedra"), through which passes the principal road from the Port of Carupano to the interior); southerly by the River "Seco" (dry); on the South this group of mountains is connected by a spur with an interior chain running nearly south for six miles, all belonging to the same mining property, in which many veins of rich ore have been discovered. On this property we have plantations of coffee, cacao and sugar-cane, and all the fruits proper to this climate, in the greatest abundance. These are cultivated by "tenants-at-will," "squatters," who, by law, must pay 10 per cent. of their products to the owner of the soil, and are subject to be turned off by the proprietor at any time on certain conditions. Contrary to the usual rule in mining countries, these lands are most fruitful in everything, having abundance of timber of the best quality covering the whole soil which is not under cultivation. Corn is produced without care, giving abundant crops, and is planted every six months. The climate is a perpetual spring temperature, equal and most agreeable. The thermometer (Fahrenheit) ranges from 65 to 75, and sickness is unknown among these salubrious hills.

The first mine, or that nearest to the port, is the "Encanto," 1800 feet above the level of the sea. This mine contains numerous and rich veins of ore, many of which have been partially explored. The principal works, over a good road, are 4½ miles from the port. This mine has been more worked than any other, for the simple reason that, being more convenient to the port, the cost of extracting the ore and placing on board ship is less, and although the explorations of this mine have been carried on in a very irregular manner, the object being to ascertain the number and direction of the veins, nevertheless from these surface works upwards of 1200 tons of undressed ores have been sent to Swansea and other ports in Europe, and there sold from £10 to £25 per ton, costing for extracting and putting aboard ship £3 10s. per ton. It is found that these ores become richer, as the depths in the workings increase; the configuration and height of ground in which this mine exists, which also applies to all the others, is such that the works can be extended to any depth without the necessity of constructing galleries below water level, consequently there will be no necessity for pumps to drain the mines or expensive hoisting machinery to raise ore to the surface.

The next mine on the same range and of most importance at present, having been more examined than any other, with the exception of the Encanto, is the "Gran Pobu." The explorations made in this mine have 500 feet more elevation than the "Encanto," and are distant from the workings of the latter about an English mile. On the southern side of the mountain, where this mine is situated, excavations have been made 90 fathoms below the apex of the mountain, and a vein of rich mineral has been struck, sufficient to prove a mine of immense wealth. The veins penetrate through aluminous and talcose slate, of trans tion formation. The minerals are sulphuret of silver, carbonates, sulphurets, and molybdate of lead, oxides of iron and manganese, containing in some instances 5 per cent. of silver in 100 lb. of metal. Assays have been made of small parcels of the different minerals taken from the mines, without particular selection, with the following results:

No. 1. A black mineral, containing sulphurets of silver, gave 1 oz. of silver to 100 lb. of ore.

No. 2. Black crystallized mineral, gave 26.3 per cent. of lead, and 100 lb. of this lead gave 3 lb. 8 oz. of silver.

No. 3. Black mineral, gave 6 per cent. lead, and 4 lb. 11½ oz. of silver.

No. 4. Lead mineral, gave 38.5 per cent. of lead and 100 lb. of lead gave 2 lb. 8 oz. of silver.

No. 5. Galena, gave 64 per cent. of lead, and 100 lb. of lead gave 3 lb. 10 oz. of silver.

No. 6. Galena mineral, (large cubical) gave 75 per cent. lead, and 6 oz. of silver per 100.

These very satisfactory results were obtained by assays made in the dry way, and through the medium of cupellation with imperfect apparatus and re-agents of inferior quality, and doubtless fall short of the exact quantities of metals contained in the ores. It may be stated that all the ores assayed were taken from a very inconsiderable depth. From observations made on the explored parts of the veins it is evident that as the depth increases the minerals improve in quantity and richness. As these veins of mineral are distributed through firm argillaceous slate ground, there is no great resistance offered to the miner, and but little timbering is required; in the immediate neighborhood, in fact, growing directly over the mines, there is abundant timber of the best quality suitable for machinery, and there is here also a spring of most delicious water in sufficient quantity for all the necessaries of life, but not sufficiently abundant for washing ores. The natural advantages of this mine are very great, and most favorable to mining operations. Houses have been built from materials growing directly around the mines. The temperature is fresh, highly healthful, and like an everlasting spring; sickness is absolutely unknown. Continuing on the same line of mountains to the River Rivilla, sufficient excavations have been made for five miles to ascertain the existence of many rich veins of mineral.

GEOLOGY OF THIS MINING REGION.

We find covering the rocks, beds of clay varying in depth from a few inches to 50 or 60 feet; these clay beds possess a peculiar interest which would fill volumes, and what great influence they have had in producing metals is yet to be ascertained; every shade of color, brown, black, blue, green, red, yellow, are found intermingled through different layers in vertical, horizontal, and every inclination and tortured position, the shadowing resembling every variety of pattern. The changes in color or elements of the clay deposits hold a fixed position in connection with the different minerals found dispersed in them, which are frequently nuggets of silver lead, copper-lead, and silver, crystallized often into grotesque figures. Under the clay beds are found magnesian limestone, black oxide of manganese, feld-spar, rocks of blende (sulphuret of zinc), finely crystallized; these are the argentiferous lead-bearing rocks interspersed with veins and strata of the different colored clays. We find, 1st, coarsely cubical veins of galena, filled in fissures of different dimensions and degrees of compactness. 2nd, Fine steel grained lead, much sought after, under the supposition that it is always richest in silver; it is generally the case, but there are exceptions to the rule; this class of ore is generally found in pockets. 3d, Sheets of galena filled in between solid sills of limestone and crevices of rock, with edges crystallized, horizontally and vertically placed. 4th, Curved lamellar and subfibrous, with pyrites of copper and beautiful fine crystals of carbonate of copper. In most of the explorations yet made, igneous action has protruded granite axes through beds of slate and limestone, and the junction of these rocks are the repositories of ores of fine cubically crystallized galena, though from time to time are encountered chimneys, more or less vertical, probably of great depth, through which ignited gases have escaped, reducing the rock through which they passed to a calcined powder, and the metals to chuncks of eccentric forms.

PHYSIOGNOMY OF THIS REGION.

Imagine yourself a spectator from an elevation of 2,500 feet, looking over a natural amphitheatre; a valley, the ground work of the picture, formed by lines of mountains from East to West, crowned from the valley to their very summits, with verdure of perpetual and varied green, now and then dotted with cozy looking nooks and cottages, and fields of brighter shades; the valley formed by a soil as rich as the deposits of the Nile, interspersed here and there with mounds, and from one end to the other, as far as the eye can reach, covered with its variegated patchwork of living green, forming the cultivated spots of corn, sugar cane and plantains, each with its cottage and curling smoke; in the distance the outspread ocean, studded in the horizon by the beautiful "Islands of the Sea," Margarita and Los Testigos, (the witnesses,) and nearer shore by those of smaller size and different forms.

In concluding this report of the mines of Carupano I cannot refrain from repeating that, as yet, the mines cannot be said to be opened, inasmuch as the workings in the deepest places are not more than 50 fathoms from grass, and these workings have been confined to two mines ("Encanto" and "Gran Pobu"), whereas the mines extend in one direction, N. W. and S. E., more than six miles, with a breadth of from 2 to 4 miles. To pronounce with an approach to certainty as to their capacity as a repository of mineral, in the present stage of exploration, is plainly impossible. I can only mention what, to this time, has been brought to light, together with the general features in the geological formation, which may serve in some sort as indications of what may be found, always bearing in mind, that the surface workings on the outcropping veins have in a short time produced 1,200 tons of mineral, averaging in value nett about £12 sterling per ton; one thousand tons have been sold in Swansea and Liverpool, and Marseilles—this is a practical and positive illustration that should go far to establish a character of great abundance and richness for these mines.

LAWS OF THE REPUBLIC.

Under the constitution and laws of Venezuela, strangers enjoy the same civil rights with native citizens; they can hold property, sell or bequeath it, without any other charges than those imposed by law upon the citizens of the country; liberty of conscience prevails, and all religions are tolerated; strangers are not subject to military duty, nor is their property subject to any other than the ordinary contributions, no taxes are levied on real estate. The regulations and laws respecting mining property are exceedingly liberal—natives of the country employed in the mines are exempt from military duty or public service.

Law of Congress, May, 1864, says:

"Art. 9. The products of mines which are worked in Venezuela shall be exempt from all duties, either national or municipal, including toll, &c.

Art. 10. Shall be equally exempt, for the term of twenty years, from all duties of importation on machinery, iron work, tools, or equipage, and all other utensils which shall be imported for working or exploring mines."

Congress has now in contemplation (1874), under the advice of the patriotic and farseeing President of the Republic, General ANTONIO GUZMAN BLANCO, to pass other laws still more favorable, for the purpose of promoting the development of the resources of the country in this branch of industry.

New York, Sept. 24, 1874. J. H. D. S.

Moisic Iron.

THE following information about the peculiar kind of Canadian iron the name of which heads this article is furnished us for publication by WM. A. SWEET, Esq., of Syracuse, New York:

This iron is found at the mouth of the Moisic river, in the Province of Quebec, on the north side of the Gulf of St. Lawrence. It seems to be driven into this small bay by the action of the incoming tide and the outgoing current of the river. It is a very fine black sand, by analysis found to be one-half magnetic. It is mixed with about 25 per cent. of quartz sand, and contains garnets, and, as some assert, diamonds. The grains are of different colors when placed under a glass, some being very blue, others green, and many amber-colored.

There are small beds of similar ore on Lake Champlain and at the west end of Lake Superior. The analysis of Moisic ore, as made by M. POISAT, is as follows:

Oxide of magnetic iron	51.12
Protoxide of iron	34.60
Titanic acid	11.27
Silica	3.01
	100.00
Metallic iron	63.83

The above analysis shows this sand to be similar to the New Zealand sand, of which some is used in England. The Moisic ore found in the bay at San Francisco, Quebec, is very clean, and lies about three feet from the surface, which is ordinary ocean beach sand. Many experiments were made in 1866 and '67 by SWEET'S Manufacturing Company, of Syracuse, to test the quality of this ore as a steel iron. An experiment by WOOD Brothers, of Wood's Falls, New York, in the Catalan forge, finally resulted in perfect success. A forge of eight fires was then erected at the bed, and work commenced in 1867. Through mismanagement there was some loss of money and success was but indifferent. The iron now produced is of very superior quality and makes the finest steel. It analyzes as follows, compared with the purest Swedish and Russian charcoal irons:

	Moisic.	Russian.		Swedish.		
		No. 1.	No. 2.	No. 1.	No. 2.	No. 3.
Silicon	.010	.062	trace.	.115	.028	.056
Carbon	.169	.272	.340	.087	.054	.087
Manganese	trace.	.020	trace.	....	trace.	....
Sulphur	trace.	.234	.066	.220	.055	.632
Phosphorus	absent.	....	....	.034	trace.	.005
Iron (by difference)	99.821	99.412	99.594	99.544	99.863	99.220
Arsenic	none.	trace.	trace.	trace.	....	trace.
	100.00	100.000	100 000	100.000	100.000	100.000

Sweet's Manufacturing Company, of which WM. A. SWEET is president, are negotiating to take the product of the forge, and will convert it into fine cast tool steel and spring steel.—*Bulletin Iron and Steel Association.*

On the High Temperatures Actually Possible.—Several memoirs upon the highest temperatures actually and theoretically attainable have lately been presented to the French Academy. M. CAILLETET has been studying the influence of pressure on combustion. He finds, by means of an ingenious apparatus in which he has been able to burn not only a candle, but also a wick fed with alcohol, in highly condensed air, that the light gradually increases with the compression, finally becoming dazzling and so brilliant as to rival that of phosphorus in oxygen. But then, however, if the pressure be increased, the brilliance of the light diminishes, the flame becomes smoky and flakes of lamp-black are deposited. From this it is clear that the temperature of the combustion increases with the pressure up to the point of dissociation of the hydrocarbon gases of the candle. The same fact was shown by the spectrum; the spectrum increased with the temperature up to a certain limit, which could not readily be passed. From these facts DEVILLE draws the conclusion that it is very decidedly an error to estimate the sun's temperature at several millions of degrees. These experiments, as well as those of BERTHELOT and his own, go to show that there is a limit to possible temperatures and that a burning body cannot produce heat of an indefinite intensity. "Perhaps," he says, "the temperature of 2000°C. is the highest temperature which can exist in the universe." M. VIOLLE concludes from some experiments which he has made, that there cannot be a temperature higher than 1400°C. anywhere.—*Journal Franklin Institute.*

A French Journal connected with the metal trade gives the following curious estimate of the value of a piece of iron costing in its rough state 1f., after being employed for different manufactures. Made into a horseshoe it is worth 3f.; into agricultural implements, 4f.; forged into ornaments, 45f.; converted into needles, 75f.; into steel buttons, 900f.; employed as polished steel for decorative purposes, 2000f.; and made into shirt studs, 6000f.

THE ENGINEERING AND MINING JOURNAL.

NEW YORK, SATURDAY, OCTOBER 10, 1874.

ROSSITER W. RAYMOND, Ph. D., Editor.
RICHARD P. ROTHWELL, C. E., M. E.,
Editor of the Coal and Iron Department.

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THE members of the American Institute of Mining Engineers are notified in the official bulletin, to be found in another column, that the next meeting of the Institute will be held at Hazleton, Pa., on the 27th inst., as we announced last week. Mr. I. LOWTHIAN BELL, the distinguished English iron master and metallurgist, will be present. It is expected that the desire to welcome to this country one who has done so much for our great industry, added to the opportunity given for examining the great anthracite mines of Pennsylvania (working in a vein from 30 to 50 feet in thickness), and the iron and steel works of the Lehigh Valley, will bring together a very large number of our members. We would urge upon each of them the duty of preparing some note or statement of his own experience in matters connected with the objects of the Institute, so that each may contribute to the pleasure and profit of the meeting. Hazleton is of easy access, possesses good hotel accommodation and many objects of interest for members. Those having papers to read should at once communicate with the Secretary, that the announcement may be made to enable others to come prepared to discuss them to advantage.

"Ready-made Brooms."

A FEW weeks ago we called attention to the publication, as original correspondence, in the *Manufacturer and Builder*, of a letter from the Wilkes-Barre correspondent of this paper. In the October number of that magazine appears the following explanation:

"An article entitled 'Coal Mining in the Wyoming Valley,' found its way on page 208 of our journal, without the knowledge of the editor that it had been published in the ENGINEERING AND MINING JOURNAL. It was inserted at the earnest representations of parties interested in the RAND mining drill and the RAND & WARING air compressor, in whose interest it was written, and who therefore were supposed to have paid the writer for his trouble.

"It appears that the reason why the parties were anxious to have it published in our paper was, that its circulation far surpasses that of the ENGINEERING AND MINING JOURNAL. We now see by the statement of the editor of that paper that the writer, 'G.', of Wilkes-Barre, is his paid correspondent, and he compares our republication with the stealing of ready-made brooms. We take advantage of the first opportunity which offers itself to acknowledge our involuntary omission of stating where the article first appeared, as we never intend to invade the sacredness of paid correspondence, nor any other original matter, editorial or otherwise, without proper acknowledgment."

Probably we ought to be satisfied with this evidence that the editor of the *Manufacturer and Builder* is sensible of the difference between original and selected matter, and is sincerely desirous of apologizing like a gentleman for an unintentional wrong. It would be impertinent, perhaps, for us to inquire how an editor could suppose that a printed slip, cut from another paper, was an original letter, addressed to his own. Nor would we be so rude as to point out that the above apology might be understood by sneering critics as merely the admission that the editor well knew he was inserting the ready-made broom at the expense of some other journal, only he did not know it was the ENGINEERING AND MINING JOURNAL! Neither would we annoy our penitent friend by inquiring how on earth an article could help "finding its way on page 208," if it was "*inserted*" there, "at the earnest representation of parties interested."

But we will venture, for the instruction of a novice in the art of acknowledging little omissions of this kind, to inform our contemporary that the well-bred way of making an apology involves the avoidance of fresh insult. Thus, for instance, if a man is accused of stealing, and hastens to explain by saying "I did take the ready-made broom, involuntarily, and without my own knowledge, on the earnest representation of a person who paid me for it, but I did not know whose it was, and I didn't expect to be caught," it is usually considered bad policy and bad manners for him to pretend that the broom was not honestly made, and that the owner of it had inferior facilities for selling it.

The statement of the *Manufacturer and Builder*, that the letter which it involuntarily transferred from our columns to its own was originally written "in the interest" of the parties whose "earnest representations" procured this involuntary act, is quite erroneous. The correspondence of this paper is written "in the interest" of nobody. Of course, when people find something in it that benefits them, they may go with it to journals of a certain class, and get it reprinted, with or without acknowledgment. That this is done "in their interest," the *Manufacturer and Builder* candidly confesses, and we are too polite to deny.

We must be excused if, in the presence of the statement we have just corrected, we are somewhat skeptical as to the boast of our contemporary of its superior circulation. But admitting it to be true, and admitting that innumerable thousands of readers are greatly benefited by the substitution in that magazine of selected for original matter, we must still point out that the people who read our letter in its columns, and the manufacturers who paid for its insertion there, would have been under still deeper obligations if the name of the ENGINEERING AND MINING JOURNAL had accompanied it; because in that case everybody would have known that the letter was really trustworthy, and not written in anybody's interest. After the frank confession of our contemporary as to the way its columns are controlled by "earnest representations," we advise it to select all its correspondence from other journals known to be independent. We have plenty of ready-made brooms, neighbor, still at your service. But if you want people to value the brooms, let our trade-mark stay on them. Then they will find ready sale, and nobody will complain of being put off with mere original trash.

Protection and Progress.

UNDER this title the *United States Railroad and Mining Register* of Philadelphia comments upon the discussion between the ENGINEERING AND MINING JOURNAL and the *Bulletin of the American Iron and Steel Association*. The *Register* "does not think it right to let the opportunity pass of explaining that progress and protection are not contradictory terms, and that protection fosters progress, and that without protection there would be no progress." This proposition is neither novel nor specially pertinent to the point at issue between us and the *Bulletin*. When we said that our hobby is progress, and the hobby of the *Bulletin* is protection, we meant to indicate that the belief in legislative protection as a remedy for all the evils in trade may be carried too far. This we do not believe that the *Register* will deny.

But the argument of the *Register* presents some new points of interest. It seems to consist in the statement that if one goes into the manufacture of an improved article with expensive plant, and other parties "with greater capital" come in to wage a ruinous competition, the first party ought to be protected against the second. We do not clearly understand the full range of this reasoning. Does the *Register* want all ironmasters of small capital protected by law against ironmasters of large capital? And how will it secure this protection? This is exactly the point on which those who make a hobby of protection will find themselves embarrassed. There is no tariff between one part of this country and another; and therefore, at a time when it is not foreign competition, but home competition and over-production which stagnates the trade, the resort to a tariff furnishes no adequate remedy.

The *Register* can scarcely mean all that its words imply when it declares that, "in such vast and complicated interests as the iron business involves, it is necessary to have some sure means of protection that shall protect all alike, and shall insure the control of the home market to all at home who care to go into the business. If the business pays, everybody can go into it." Is the *Register* ignorant that the present prostrated condition of the iron trade of the country is due to this one cause more than to any other, namely, that "everybody" has been going into it? The only remedy in this respect is obviously, that somebody must go out of it. Whoever would stay in, and prosper, must do so under the law of the "survival of the fittest," by virtue of some "protection" additional to that which legislation can afford.

The worst thing for any trade is a perpetual change of its artificial conditions. Aside from the whole question of Free Trade *vs.* Protection, the continual uncertainty, to say nothing of the political corruption attendant upon frequent attempts to alter the tariff, is disorganizing and demoralizing in the highest degree.

The increase of the tariff at the present time would probably have no effect whatever in raising the price of American iron, for the simple reason that there is more iron for sale than the country immediately wants. But, if the raising of the tariff should immediately raise the price of iron at home, it would prolong

the life of enterprises that ought to die and get out of the way, leaving the market to the works which by reason of adequate capital, natural advantages, and scientific management, are entitled to it.

The raising of the tariff, if it produced, as it might do after some period had elapsed, a general rise in the price of iron, would undoubtedly bring on new complications of the labor question. We are not in favor, as we have repeatedly explained, of reducing the wages of workmen to starvation point, but neither are we in favor of indefinite advance in wages. The equalization of wages is now going on, as we have pointed out, by virtue of their advance abroad, and particularly in England, rather than their reduction here. The difference is, at the present time, much smaller than the *Register* seems to think. The cost of labor to a ton of iron produced in England is surprisingly little; but if the *Register* will analyze the figures, it will find that the small cost is due more to labor-saving contrivances in mining, handling, and transportation of materials, than to the small wages paid. Americans are justly proud of their ingenuity and enterprise in the substitution of machinery, and the arrangement of manufacturing operations, so as to save manual labor; but they do not realize to what an extent they have been imitated, and in how many particulars surpassed, by foreign countries. Moreover, it is specially in the most highly "protected" industries that American talent has done least in this respect; and the iron industry is perhaps the most illustrious example we could select of a rudeness in methods and appliances quite unworthy of the standpoint of mechanical science in this country.

Aside from the large mines and furnaces, this state of things is patent to every traveller of intelligence; and even at the most advanced and best arranged establishments it is not difficult to find evidences of a carelessness with regard to small expenses and leakages which, we think, has been bred by abnormal prosperity. Under the pressure of adversity and the necessity of economy these things will remedy themselves. It ought to be possible to manufacture pig iron profitably in the United States, at even the present low selling price; and we honestly believe that all that is necessary to restore the iron business to a condition of stable prosperity is improvement in the economy of working and the extinction of badly situated or badly managed establishments.

We have neither time nor inclination to occupy our limited space with the interminable discussion of the tariff question; and we shall continue to pursue our own course in working for the rational and normal progress of the mining and metallurgical industries of the countries. Our friends who think "protection" the great agent of progress ought at least to be grateful to us for paying attention to those minor matters, economy, science and inventive enterprise, which in their devotion to "protection," they are apt to neglect. While so many journals are pegging away at the subject of raising the price of iron, surely one journal may well be devoted to the subject of improving its quality and reducing its cost. We do not, indeed, see the gain in raising the price of a commodity which overstocks the market: but even if that were done, how pleasant it would be for the patrons of the *Register* and the *Bulletin* to make good iron cheaply while selling it dearly. Don't discourage us, gentlemen, in our little labor of love. While you are swelling your gains, we are striving to lessen your losses; and the subtraction of *minus* quantities will benefit you as much as the addition of *plus* quantities—besides being incidentally a good thing for mankind!

Boles' Patent Cartridge Package.

As our readers are aware, blasting powder is sold in kegs containing 25 lb. of powder. The miner makes his cartridge, and fills it in the mine from the keg, and does so, as statistics show, at a large amount of risk. Our Mine Inspectors' reports for the past five years state that, on an average, 35 men are killed or injured annually in this way in our anthracite mines.

Mr. HENRY M. BOLES, President of the Moosic Powder Company, has recently devised a convenient method of packing the powder in cartridges ready for use.

The powder is packed in quantities of half a keg, in strong paper tubes, considerably longer than the space occupied by the powder in them, which being separated at regular intervals inside, the tube is twisted and folded over at the vacant spaces for convenience of transportation and handling. The paper is covered with a water-proof coating, so that neither the damp air of the mine, nor even covering it with water for a short time, will injure the powder.

The cartridge packages are sold in boxes containing eight packages, equal to four kegs, or 100 lb. of powder, at the same price as powder in kegs. They may be taken in the mines in the boxes; but the best way is to get an iron can which will hold two packages and which may be slung on the back.

This arrangement allows the miner to make his charge as large or as small as he wishes, without risk or danger of handling the powder, and it effects a considerable saving of time now given to making cartridges. This appears to be one of those simple and practically useful inventions which exert a much wider influence on the "cost of mining" than probably ever the inventor himself has imagined. The advantages claimed are that the danger of handling powder over the open keg is avoided; the cost of paper and soap is saved, and the time of making a cartridge; and you get the powder into the hole as good as it is made.

THOSE needing steam pumps, steam, gas or water pipes, brass work or steam radiators will find that Mr. A. CARR, whose advertisement will be found in another column, can furnish excellent goods, and at moderate prices. We have, on several occasions, noted with pleasure the success of his pumps, both in this country and abroad. Some of them are now working very satisfactorily in the German coal mines. Mr. CARR is an energetic, prompt and pushing business man and mechanic, and has earned the success he is attainining.

COLLIERY OWNERS will please take note of an advertisement, in another column, of coal cars for sale. This will probably be an advantageous opportunity for stocking a colliery which may have a track of the same gauge.

CORRESPONDENCE.

Quinnimont Coal and Iron.

QUINNIMONT, Fayette Co., West Va., Oct. 2, 1874.

TO THE EDITOR: SIR—Below I give you a short description of our improvements here, consisting of blast furnace, coal mines and coke ovens. I would like to make it more complete, and at the same time give you more statistical and financial information; but, as to the first, our furnace is not yet in blast, and, as to the second, suffice it to say that, owing to causes which could have been avoided, the company has spent an enormous amount of money in excess of what the improvements should have cost.

The furnace was begun in July, '73, and will be put in blast in about one week, or about the 10th of this month. It is a stone stack, 45 feet high, with 15 feet of iron shell on top. Total height, 60 feet; diameter of bosh, 15 feet; hearth, 6 feet; and throat, 9 feet. Blowing engine is horizontal, with steam cylinders, 6 feet by 22 inches; blast cylinder, 6 feet diameter, 7 feet stroke. A new engine is found to be necessary, and is ordered. The hot blast ovens are of Ford's patent, four sections; casting house, 75x54, stone building with iron roof. The ores will be a peculiar variety of magnetic from the Blue Ridge, brown hematites from Bell's Valley and Elizabeth, red fossil from Clifton Forge, and a mixture of Lowmoor limonite and brown hematite. Fuel, Quinnimont coke. The coke ovens are of the "beehive" pattern, 11 feet inside diameter, built of stone, red and fire brick, and cost about $300 apiece. Capacity about 1 ton per 24 hours. The coke is of good quality, 100 lb. coal yielding 62 to 65 lb. coke.

Our coal is from a vein on the south side of Laurel Creek, Fayette County, about three-quarters of a mile from Quinnimont. The vein should have been opened on the north side of the creek, as the measures dip SW. and the course of the creek is about N. 80° E. for nearly four miles. The crop of the vein, however, and 20 or 30 yards of gangway dipped to the North, and developments since made show that the vein at this point rolls in every direction, and by going around these rolls we have been able to drain the mine without using pumps, although the gangways and breasts are very crooked and irregular. The vein was about 4½ feet thick on the crop, but will not average more than 3 feet throughout the mine. The coal costs $1 10 in railroad cars. It is 1,120 feet above New River and 2,320 feet above tide. The veins here are evidently split, larger veins being opened 3 to 4 miles above Quinnimont. In a few weeks I will take a section of the measures at these openings and will send you a tracing. A section at our present mine shows no other vein as thick as the one we are working. I would like to have made this description more complete, but our works are not yet in working order.

S. F. M.

Large and Small Water Wheels.

TO THE EDITOR: SIR—Permit me to call your attention to the items in the *Mining and Scientific Press*, of San Francisco, on the subject of "Large or Small Water Wheels."

The editors of that paper take the view that "no power can be gained by increasing the diameter of the wheel." A correspondent contended that in the hurdy-gurdy water wheel, the larger the diameter, the more power is obtained from the same amount of water and the same fall.

It would be of great importance in thousands of locations where water powers and water privileges of great falls are utilized, or could be improved, were the theory of "Correspondent" correct in practice; and as your ENGINEERING AND MINING JOURNAL represents the Sciences, as well as the practice of Engineering and Mining on this continent, it is desirable that your view on this subject should be known, as it interests the miner, the millwright, the water owner, and the reading public.

In the over-shot water wheel, the weight of an amount of water contained in the buckets causes their descent, and this weight and height of fall gives the power.

In the turbine water wheel, the height of fall of water, and the amount or area of water pressing against the buckets while the water is confined from height of fall to the discharge from the turbine wheel, gives the power.

In the hurdy-gurdy water wheel, the height of fall of water, area of nozzle, or the quantity of water which strikes against the buckets or cups on the periphery of water wheel, while the water is confined only from the highest place to nozzle, gives the power.

The power of the water in the over-shot water wheel may be ascertained theoretically by multiplying the diameter of the wheel with the weight in pounds of the water in a minute, and dividing by horse-power, or 33,750 lb., and the power of a given amount of water increases with the increased diameter and fall; if, therefore, 30 inches of water are used on a wheel of 24 feet diameter, discharging 45 cubic feet of water per minute, weighing 2,812½ lb., giving 67,500 foot-pounds, divided by 33,750 lb., giving 2-horse-power; and again, 30 inches of water used on a 36 feet over-shot wheel, discharging 45 cubic feet of water per minute, weighing 2,812½ lb., or 101,250 foot-pounds, divided by 33,750 lb., giving 3-horse

power. But in the over-shot water wheel, the practical limit of diameter is reached at 60 or 70 feet, and it may be converted into a hurdy-gurdy water wheel and take its place, where a great deal higher fall exists, provided that the theory of the power of a given amount of water with a given fall increases with the increased diameter of a hurdy-gurdy water wheel.

In the hurdy-gurdy water wheel the water presses against the buckets. This pressure is represented by pounds or weight, and can be ascertained by its effect indirectly, or by weighing directly, by placing a cup or bucket of the wheel on a scale before the nozzle and play water on.

The velocity of the water at its exit from the nozzle is always in proportion to its height, be the quantity large or small, if the pipes are wide enough, so as not to cause friction to its passage.

The velocity of the water imparts to the empty wheel its own velocity. If the velocity of the water at the nozzle is 4,000 feet per minute from a fall of 100 feet, then a water wheel of 7 feet diameter, empty, will make 180 revolutions; a wheel of 14 feet, 90 revolutions; one of 28 feet 45 revolutions; and with the load on, driving machinery, the velocity of the periphery of the hurdy-gurdy water wheel is retarded, being subjected to the action of water and the work performing, and makes from 40 to more per cent. less revolutions per minute. The action of the water is thought to be most effective when the face of the wheel is provided with castings in the shape of cups, so that the water may act reactive.

Your opinion on this subject is of interest, as some parties adhere to the opinion that the larger hurdy-gurdy water wheel gives more power than the small.

Yours truly, J. R.

NEW PUBLICATIONS.

The Construction of Mill Dams. Published by JAMES LEFFEL & Co., Springfield, Ohio, and 109 Liberty street, New York. Price, $2 50.

WE have a great many books on mechanics and engineering that tell us, even with a formidable array of mathematical formulæ, how a dam should be built, and unquestionably these books are of the greatest possible value as giving the very foundation, the principles on which dams should be built, and to which they should conform as near as circumstances will permit. But, probably, ninety-nine out of every hundred of the dams built are constructed without the assistance of an engineer, and would never be built if they necessitated the expense of elaborate plans and costly structure. In a new country like ours, where a man is expected "to build a house with an axe and a jackknife," there is no better test of the practical value of an engineer than his ability to make the most of the material at his command, and if we may make so irreverent a compliment (for certainly a great compliment we consider it) to our American engineers, it is that they possess, above their professional brethren of any other country, that invaluable practical ingenuity which would enable them "to build a house with an axe and a jacknife."

The book of which we give the title above, does not pretend to be a scientific treatise on the subject, but it gives just that practical information which will be of use to any one, engineer or not, who may have to make use of a water-course. We have here discribed, with sufficient minuteness to enable an intelligent person to work out the details, every kind of dam, from the brush and log dam, suitable in the backwoods, to the cut-stone dam with curved apron, the most perfect form for permanent and important work.

The book cannot but prove of the utmost benefit, for in showing, without the use of technicalities, how easy it is to build a dam, and how simple a structure will answer the purpose of temporarily holding back water, it will induce many to make use of a power now being wasted, and which would continue to lie neglected were the owner acquainted only with the more elaborate structures described in more pretentious works. While fully recognizing that this is by no means a perfect treatise on the subject, and does not pretend to give the rules for calculating the strength and dimensions of the more perfect forms of dam, yet we give it a high place on the shelf of our practically useful works, and we commend it to the perusal of engineers and others interested in the subject.

The First Anthracite Pig Iron Made in America.

For the Bulletin of the American Iron and Steel Association.

WHILST the many familiar with the history of iron making accord to Mr. NEILSON of Scotland the credit for his invention of the hot blast as applicable to the anthracite blast furnace, they forget the fact that as far back as 1833 (one year before Mr. NEILSON filed his patent papers, and three years before Parliament granted him the right to the patent, and five years before Mr. CRANE conceived the idea of a practical result from Mr. NEILSON'S patent—*vide* British Association's Report for 1838), Dr. FREDERIC W. GEISENHAINER of Schuylkill County, Pennsylvania, was experimenting with ovens for heating air before its introduction into the blast furnace; and the result of his experiments on a small scale was so satisfactory that his caveat for the patent was prepared. His experiments continued through 1837, '38 and '39 in connection with Mr. WM. LYMAN, who was then running the furnace at Pottsville with charcoal. These gentlemen were encouraged by Mr. NICHOLAS BIDDLE (of United States Bank fame), of Philadelphia, and Col. JOSEPH PAXTON, of Catawissa, Pennsylvania; the former offering a premium of one thousand dollars for the first ton of anthracite pig iron made in this country.

On the 18th of January, 1840, Mr. LYMAN invited a number of gentlemen to Pottsville to witness the working of his furnace with anthracite coal. All that Dr. GEISENHAINER had claimed and taught, seven years before, was then practically demonstrated, and to Mr. LYMAN was awarded the premium for the first anthracite pig iron made in this country. The furnace in which it was made was then christened the "Pioneer Furnace," and is still known by that name. On the occasion of this celebration Mr. BIDDLE made this prophetic speech:

"And this, after all, is the great mystery—the substitution of what is called the hot blast in lieu of the cold blast. Let us see the changes which this simple discovery is destined to make. As long as the iron ores and coal of the anthracite region were incapable of fusion the ores were entirely useless, and the coal nearly unavailable for manufactures, while, as the disappearance of timber made charcoal very expensive, the iron of Eastern Pennsylvania was comparatively small in quantity and high in price, and the defective communication with the interior made its transportation very costly. The result was that, with all the materials for supplying iron in our own hands, the country has been obliged to pay enormous sums to Europeans for this necessary. . . . This dependence is deplorable; it ought to cease for ever; and let us hope that, with the new power this day acquired, we shall rescue ourselves hereafter from such a costly humiliation. We owe it to ourselves not thus to throw away the bounties of Providence who in these very materials has blessed us with a profusion wholly unknown elsewhese. With these resources you would have abundant employment, if you could only supply the present wants of the country for which we are now dependent on foreigners. But the sphere of demand is every day widening for the consumption of iron. The time has come when nothing but iron roads will satisfy the impatience of travellers and the competition of trade. The time is coming when iron ships will supplant these heavy, short-lived, and inflammable structures of wood. We shall not long be content to cover our houses with strips of wood under the name of shingles, prepared for the first sparks, if we can have low-priced iron, in which event, too, the present pavements of our towns would be superseded by footways of iron. * * * * If the coal and iron have made Great Britain what she is, if this has given her the power of four hundred millions of men and impelled the manufactories which have made us, like the rest of the world, her debtors, why should not we, with at least equal advantages, make them the instruments of our own independence?"

The following year Mr. C. E. DETMOLD first successfully introduced the use of gases from the tunnel head of a furnace for the heating of a blast, as well as for the generation of steam. This was the crowning achievement in the manufacture of pig iron. The dawn of the iron age was past, with the realization of which all are now familiar. How few remember, or associate their success with, the names of GEISENHAINER and DETMOLD! It would be a proper tribute to the memory of Dr. GEISENHAINER if the iron men of Pennsylvania would erect an iron statue of him, and so locate it at the Centennial Exhibition that it would be surrounded by the anthracite coals and irons of Pennsylvania. Y.

CINCINNATI, August 18, 1874.

COAL TRADE REVIEW.

Import Duty on Coal.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. to the bushel, 75c., gold.

All *slack*, or *culm*, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold.

Not otherwise provided for, per ton, 40c. gold.

This is the only report published that gives full and accurate returns of the production of our Anthracite mines.

NEW YORK, Oct. 9, 1874.

The Production of Anthracite Coal for the week ending Oct. 3, 1874, was as follows:

Tons of 2240 lb.

	WEEK. Tons.	YEAR* Tons.
Wyoming Region.		
Delaware and Hudson Canal Co	48,839	1,781,286
Delaware, Lackawanna and Western R.R	58,423	1,869,990
Pennsylvania Coal Co	30,476	1,002,892
Lehigh Valley R.R.	14,684	718,019
Pennsylvania and New York R.R	994	45,957
Central Railroad of New Jersey	43,635	1,001,580
Sold at the mines by L. & W. C. Co	550	15,054
	197,601	6,494,778
Lehigh Region.		
Lehigh Valley R.R	42,216	2,367,894
Central Railroad of New Jersey	35,193	856,139
Danville, Hazleton & W. B.R.R.	2,395	31,106
	79,804	3 255,139
Schuylkill Region.		
Philadelphia and Reading R.R	175,730	3,718,972
Shamokin and Lykens Valley	25,031	684,431
	200,761	4,403,403
Sullivan Region.		
Sullivan and Erie R.R	410	28,216
Total of all the regions	478,576	14,181,536

* Year beginning Jan. 1.

The following table does not give the entire production of our bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending Oct. 3, was as follows:

Tons of 2000 lb.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Cumberland and Pennsylvania R.R	48,631	1,735,793
Cumberland Branch R.R	5,492	206,990
Barclay Region, Pa.		
Barclay R.R. gross tons	6,057	256,414
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R. Reports to September 19th.	3,349	174,457
Clearfield, Region, Pa.		
Snow Shoe	933	44,956
Tyrone and Clearfield	14,751	462,743
Allegheny Region, Pa.		
Pennsylvania R.R.	4,185	158,854
Pittsburgh Region, Pa.		
West Penn. R.R	3,949	146,471
Southwest Penn. R.R	261	5,480
Penn and Westmoreland gas coal, Pa. R.R.	14,762	676,814
Pennsylvania R.R	12,682	344,735
Kanawha Region, W. Va.		
Chesapeake and Ohio R.R		102,126
Shipments from *Block House Region, N. S.*, to Sept. 26.		
Consigned to the Provinces, tons 2240 lb	1,059	11,696
" " " United States " " "	174	13,973
Shipments from *Pictou Region, N. S.*, to Sept. 26.		
Consigned to the United States tons 2240 lb.	2,822	44,212
" " " West Indies " " "	1,597	7,450
" " Canada " " "	1,230	85,315
" " Other provinces " " "	2,698	52,105

The Production of Coke for the week ending Sept. 26.

Tons of 2000 lb.

	Tons.	Year. Tons.
Tyrone and Clearfield	12	581
West Penn. R.R., " " " "	318	9,966
Southwest Penn. R.R " " " "	10,824	304,658
Gas Coal, Penn. R.R. " " " "	750	28,000
Pittsburgh Coal, Penn. R.R. " " "	1,260	50,913

The production of Anthracite for the week ending Oct. 3d was as follows: Wyoming Region 197,601 tons, being 6,890 tons more than the preceding week. In the Lehigh region, 79,804 tons, or 8,233 tons less than the week before, and in the Schuylkill region, 200,761 tons, being 36,529 tons more than the preceding week.

The total production of Anthracite from all the regions was for the week 478,576 tons, as against 443,991 tons the preceding week, (or an increase of 34,585 tons), and 494,907 tons for the corresponding week last year. From January 1st to Oct. 3d, there were produced 14,181,536 tons, as against 15,341,685 tons for the same period last year. This shows a decrease of 16,331 tons for the week and 1,160,149 tons for the year, as compared with 1873. The figures of last year's production are taken from the Pottsville *Miners' Journal*.

The Delaware and Hudson Canal Company has on stock at Honesdale 110,000 tons, at Rondout 50,000, and at Weehawken, 10,000 tons.

The receipts at Port Richmond were 50,000 tons; shipments, 58,000 tons; and balance on hand 46,000.

The receipts at Greenwich, Philadelphia, were: bituminous 3805 tons, and gas coals 1789 tons: shipments: bituminous 3779 tons, and gas coals 3118 tons; balance on hand: bituminous 2505 tons, and gas coals 1898 tons.

The production of Cumberland coal from January 1st to Oct. 3d, inclusive, was 1,942,783 net tons of 2000 lb. The production for the week was 54,123 tons, as compared with 59,260 tons for the corresponding week, and 2,081,970 tons up to the corresponding date in 1873—this is a total decrease for the year, thus far, of 139,187 net tons.

The receipts of Cumberland Coal at Locust Point (Baltimore) for the week were 16,030 tons; of West Virginia gas coal 2580 tons.

Exports of coal from Baltimore from 1st January to 1st September, 61,787 tons as against 52,756 tons in the same time last year.

	week.	year 1874.	year 1873.
The receipts of coal at Coal Port (Trenton)	2,992	210,093	280,315
" " " South Amboy	5,408	475,915	371,956
Shipments at Coal Port (Trenton)	1,885	209,999	281,203
" South Amboy	12,391	481,286	356,199

The receipts of coal by the Michigan Southern RR. at Buffalo for the week were 5,126 tons. The shipments by Lake, 13,735 tons.

Freights on coal from Buffalo to Chicago 40c. per ton. Erie to Chicago 65c.

There is little improvement to note in the condition of the coal market. The Combination has found it necessary to limit the output for October to 75 per cent. of the amount proposed in the basis for this month, and the present prospect is that at least as great a reduction will have to be maintained during November. There can be no question about the intention of the Combination to advance the price 15 cents per ton in November, and an effort will be made to maintain the November prices through December and January.

The short work (44 hours per week) of the cotton mills of New England has curtailed consumption, but has little effect on present sales, for most of the mills have already laid in their winter stocks, and the present action will merely defer their spring purchases.

We note the following announcements by members of the Coal Combination. The Lehigh Valley R.R. Co., pays its usual quarterly dividend of 2½ per cent. on the 15th inst.

The Delaware Lackawanna and Western Railroad Company, and the Philadelphia and Reading Company pay on the 20th the quarterly dividend of 2½ per cent.

On the 23d inst. the Central Railroad of New Jersey pays also 2½ per cent.

At the high price obtained for coal throughout the year, and the comparatively moderate amount spent in mine improvements, the anthracite mining companies should also have earned these rates of dividends. It will be remembered that the above dividends are by the railroads and not the mining companies. It would be interesting to know how much the Philadelphia Coal and Iron Company, the Lehigh and Wilkes-Barre Coal Company, and the Luzerne Coal and Iron Company have netted during the year. We hear no announcement of dividends.

The bituminous trade is exceedingly dull, in fact, it is pretty well over for the year, so far as new orders are concerned. The diminished output and low prices are likely to have one good effect, by drawing attention of the managers of the coal companies to the little "leaks" that are ignored in more prosperous times.

In our coal trade report of the 19th September we called attention to the action of the boatmen on the Chesapeake and Ohio Canal, who, we stated, had "passed arbitrary resolutions to the effect that no coal shall be permitted to pass through the canal except it pay the rates ordered by the Union, and that no rebate or drawback shall be allowed. They have prevented going to work, by force and intimidation, those who are disposed to work on at the old rates, and the Canal direction has ordered a posse to accompany the boats and prevent disturbance." The Cumberland *Times* of the 5th inst., referring to these remarks, states: "It is hardly necessary for us to say that the whole article is one *glaring falsehood*, that the boatmen have passed no such resolutions, nor the canal company taken any such action as represented."

Mr. T. F. McCARDELL, who is editor and proprietor of the Cumberland *Times*, reports in his paper of the 27th of August the proceedings of a meeting of boatmen held at Cumberland the previous day. From this report it appears that Mr. McCARDELL was the leading spirit at that meeting, and was called on to address the boatmen. We will quote from the *Times* the closing paragraph of Mr. McCARDELL'S report: "The speaker (Mr. McCARDELL) continued at some length, advising the boatmen as to their course, and when he concluded the following preamble and resolution was adopted without a dissenting voice:

"*Whereas*, It has become necessary for us, the boatmen of the different lines belonging to the different coal companies, to stop loading until we get an advance of freight of ten cents per ton; therefore be it

"*Resolved, That we will not load, nor allow any other parties to load, at a less freight than $1 35 to Georgetown, and $1 40 to Alexandria, and that there shall not be any drawback or bonus paid for loading.*"

The italics are ours.

Mr. McCARDELL tells us to-day that his own report, just quoted, is nothing but a "*glaring falsehood*," for "the boatmen," he says, "have passed no such resolutions."

It is, indeed, very evident that one of Mr. McCARDELL'S statements is incorrect, not to make use of his own more forcible expression, and we regret that there is abundant testimony to show his report of the meeting, so far as quoted above, to be substantially correct, for not only was this resolution passed by the boatmen, but it was adopted at the instigation and on the advice of Mr. McCARDELL himself, as he tells us in the above extract from his own report. As to the action of the Canal Company, which we reported, and which the Cumberland *Times* puts in the same category as one of Mr. McCARDELL'S reports, we have before us a copy of a letter of instructions, dated 12th September, from Mr. A. P. GORMAN, President of the C. & O. Canal, to the Collector and to the Superintendent of the Canal, stating:

"I am informed that within the past week boats, after having been loaded and a way bill issued, have been forcibly taken possession of and prevented from leaving port by parties unknown to me. The Board of Directors have instructed me to direct in any such cases where you have not the power to protect the owner of the boat, to call on the Sheriff of the County for his aid, &c., &c."

Nay, gentlemen, we have knowledge of these facts, and are well informed of how matters are managed in Cumberland. We have spoken advisedly and with moderation, for the origin of these boatmens' troubles is notoriously as we in imated, viz.: in the manner in which some of the Cumberland coal business is managed. The matter is even coming to the knowledge of some of the patient stockholders of these companies, and they are naturally anxious to know why such magnificent property as the Cumberland coal mines should make so poor a return on the capital invested.

Cargo Prices of Bituminous Coal.

* *Domestic Gas Coals.*

	At the Shipping Ports.	Alongside in New York.
Per ton of 2240 lb.		
Westmoreland and Penn, at Greenwich, Phila.	$6 25	$7 65
" " at S. Amboy	7 00	....
Red Bank Cannel Pa., at Phil.	8 50	9 50
" " at S. Amboy	9 00	....
" Orrel, "	7 00	7 65
" " at Phil.	6 25	....
Youghiogheny, Waverly Co, at Baltimore	6 00	7 65
Despard, West Va., "	5 50	7 40
Murphy Run, W. Va. at Baltimore	5 50	7 40
Fairmount, W. Va. "	5 50	7 40
Newburgh Orrel, Md. "	5 50	49
Cannelton Cannel, W. Va., at Richmond.	11 00	12 80
" Splint, " "	5 50	7 50
Peytons Cannel, " "	....	12 50
Sterling " Ohio	....	14 00
Straitsville, " Lyonsdale Cannel	....	11 50
At Sandusky, O.	3 90	....

FOREIGN GAS COALS.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	12/@13/6	7 00@ 8 00
Liverpool House Orrel, at Liverpool	29/	13 00
Ince Hall Cannel "	52/	18 00
" Gas Cannel "	40/	15 00
Scotch Gas Cannel, at Glasgow, nominal.	28/	9 50
	Gold.	
Block House, at Cow Bay, N.S.	2 25	6 50
Caledonia, at Port Caledonia	1 87½	5 70
Glace Bay, at Glace Bay	2 00	5 50
Lingan, at Lingan Bay	2 25	6 50
Sydney, International and Reserve mines, at Sydney	2 25	5 75
Pictou, Albion and Vale mines, at Pictou	2 50	6 50

STEAM AND HOUSE COALS.

Broad Top, at the mine, $1 25; at Port Richmond, Phil	4 75@5 00	6 00@6 25
Cumberland, at Georgetown and Alexandria, Va.	4 60@4 75	6 50@6 75
Clearfield, " Derby," "Kitanning" and "Sterling," at the mines, $1 25; at Greenwich, Phil	4 75@5 00	6 25
James River, carbonite, at Richmond, Va	6 75	9 00
" bituminous, "	4 00	6 25

Retail Prices in New York.

Per ton of 2000 lb.

Liverpool House Orrel,	$20 00@22 00
Liverpool House Cannel,	....@25 00
American Block,	16 00@....
Straitsville Cannel	16 00@....
Carbonite	12 00@....

Retail Prices.

per 2000 lb. are as follows:

	Grate and Egg.	Stove.	Chestnut.
Pittston coal, in yard	$6 00	$6 20	$5 40
Delaware & Hudson, delivered	7 35	7 60	6 85
Scranton, in yard	7 25	7 50	6 80
Wilkes-Barre, delivered	7 10	7 35	6 60
Lehigh & Locust Mountain,	7 50	8 00	7 00
Schuylkill Red Ash	8 25		
Cumberland	8 00		

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Port Johnston to New York	40c.
" " South Amboy to New York	45c.
" " Newburgh to New York	65c.
" " Port Richmond, "Phila." to N. Y. alongside	95c.
" " Rondout to New York by boat or barges of the D. & H. Canal Co. "delivered"	50c.

Wholesale Prices for Oct. of Anthracite f.o.b., at the Tide Water Shipping Ports per ton of 2240 lb.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
†Lackawanna and Scranton at Elizabethport & Hoboken	5 40	5 50	5 60	5 75	6 25	5 20
‡Pittston at Newburgh	5 00	5 00	5 10	5 30	5 75	4 70
Wilkesbarre at Port Johnston	5 40	5 50	5 60	5 75	6 25	5 20
Plymouth, R. A.	....	....	5 60	5 75	6 35	5 20
Susque. Coal Co. at Amboy W.A.	5 40	5 50	5 60	5 75	6 35	5 20
Kingston at Hoboken	5 40	5 50	5 60	5 75	6 25	5 20
Lehigh Coals.						
Old Company at Port Johnston	6 35	....	6 30	6 30	6 45	5 50
Old Company's Room Run "	5 85	....	5 85	5 85	6 20	5 20
Sugar Loaf at "	6 35	....	6 30	6 30	6 30	5 35
Lehigh Coal Exchange "	6 20	....	6 15	6 15	6 30	5 35
Honey Brook at Elizabethport	6 20	....	6 15	6 15	6 30	5 35
Spring Mt. C. Co. at Hoboken	6 20	....	6 15	6 15	6 30	5 35
Beaver Meadow at South Amboy	6 20	....	6 15	6 15	6 30	5 35
Schuylkill Coals at Port Richmond.						
Schuylkill white ash	4 90	5 00	5 10	5 25	5 75	4 30
Schuylkill red ash	....	....	5 25	5 35	5 80	4 40
Shamokin white and red ash	....	....	....	5 25	5 80	4 45
N. Franklin	....	....	5 70	5 70	5 75	4 45
Lorberry	....	....	6 05	6 05	6 05	4 65
Lykens Valley	....	....	....	6 70	6 70	5 25

† f.o.b. in New York Harbor.

‡ These are the rates for Pittston coal on registered contracts only. Buyers not having contracts will be charged 15 cents per ton in addition to the above prices.

Coal Trade of Philadelphia.

PHILADELPHIA, Oct. 7, 1874.

Bituminous Coal, Wholesale.

Penn. and Westmoreland (Gas), f.o.b., Greenwich | 6 25
Broad Top, (according to destination) f.o.b., Port Richmond | 4 75@5 00
Clearfield f.o.b. at Greenwich, according to destination | 4 75@5 00

Bituminous, Retail,

$6 60 in yard, per 2240 lb., cartage added.

Anthracite, Retail.

Egg, per 2000 lb., $6 20; Stove, $6 25; Chestnut, $5 10; delivery carts, 75 cents extra.

Baltimore, Md.

Oct. 7, 1874.

Reported by our Special Correspondent.

WHOLESALE PRICES PER 2240 lb.

ANTHRACITE.

	afloat.	at depot.
Wilkes-Barre, "Lee," or "Diamond,"		
Lump, steamboat	$5 00	$5 40
Broken	5 25	5 50
Egg	5 62	5 90
Stove	5 82	6 10
Pittston and Plymouth.		
Lump, steamboat, and broken	....	5 45
Egg	....	5 80
Stove	....	6 00
Lykens Valley, red ash, all sizes	6 00	6 30

From wharf or yard, wholesale, 50@75c. additional.
By retail, all kinds and sizes, per 2,240 lb, $7@8 00.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point for cargoes	4 60	4 75
West Va. Gas Coal f. o. b. at Locust Point	5 50	....
Kanawha Cannel, coarse	13 00	....
Tyrone	7 25	....
Ritchie Mineral of West Virginia	1 00	....

Boston.

Oct. 7, 1874.

Reported by our special correspondent.

CARGO PRICES TO TRADE.

Lingan coal	$ 5 75	Westmoreland	7 75
Caledonia	5 10	Waverly Co. Youghiogh'y	7 75
Pictou	6 15	Cannelton Cannel	13 50
Block House	5 60	Cumberland	5 90@ 6 20
Red Bank Cannel	10 00	Anthracite,	6 50@ 7 00
Glace Bay	5 40	" Retail	8 00
Sydney	7 25		

From the *Commercial Bulletin* of October 3.

Anthracite is still very dull. The statement by the ENGINEERING AND MINING JOURNAL "that the Reading Company have issued large posters announcing chestnut coal for sale at the Richmond dump at the low price of $4," has made a marked sensation in this market, and for the week wholly demoralized the small business that might have been done. The retail trade, notwithstanding the cold weather with prevailing east winds, causing a necessity for regular household consumption of coal, has been quite listless, giving the yardmen a sad melancholy. The Scranton sale seems to have no interest here.

Bituminous is flat. The singular fact exists that the Gas Company is in the market to sell most anything out of its dozen different qualities. We have a sale of four small Cape Breton cargoes to the railroads at $5 25 to arrive, and also two cargoes George's Creek at $6.

Burlington, Iowa.

Oct. 3, 1874.

Specially reported by MESSRS. WIGHTMAN & CUMMINGS wholesale and retail dealers and shippers of coal.

No change.

Per ton of 2000 lb.

Lehigh Lump	$15 00	Illinois Smithy	$6 00
Lackawanna	11 00@11 50	" Steam	3 75
Blossburg Smithy	13 00	Connellsville Coke	12 50
Pittsburgh "	10 00	Illinois "	10 00

Buffalo, N. Y.

Oct. 7, 1874.

Reported by our Special Correspondent.

The only change in prices we can notice is the monthly advance of 15c. per ton on hard coal, and we change your quotations accordingly.

All deprecate as bad policy further advance at this point.

but apparently the powers have ordained, and so it must be, whether good or bad. The retail demand increases as the cold weather comes on, which makes business a little better.

In steam and gas coals no change to note. The demand is, however, increasing, especially in the low priced coals—nut, slack, and Fairmount lump. The accumulation on hand has been worked off, and the increased consumption, in consequence of cold weather, will help the demand considerable.

The gas coals from the Reynoldsville basin, are making a fair mark and seem, so far as they are used, to be liked nearly as well as the Youghiogheny. The lack of a tram-way to the mines will limit the production, and as the coal has to be teamed two miles, this will, on the approach of rainy weather, totally suspend working.

With a good steam road, built from the low grade road, up the Soldier's run to the mines, the trade would be wonderfully increased, and these coals would, for the Eastern market as far East as Albany, gradually supersede the Westmoreland coals.

Per ton of 2000 lb.

	Slack.	Nut & Slack.	Nut.	Lump
Connelsville coke				6 50
Sterling cannel				6 00
Red Bank				5 75
Youghiogheny coal for gas				5 50
Briar Hill coal		3 25		5 00
Fairmount "		3 25	3 50	4 25
Catfish "		3 25	3 75	4 50
Stonebore "	2 75		3 50	

Briar Hill coal, and Stirling and Red Bank cannels, at $8; all other coals $1 per ton above wholesale prices.

Anthracite f. o. b. vessel. Retail prices delivered and screened, $1 per ton additional.

Grate	6 70	Stove	7 00
Egg	6 70	Chestnut	5 60

Chicago, Ill.

Oct. 6, 1874.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants.

No change in prices of coal—prices firm—demand moderate for this time of the year.

Retail prices per ton of 2000 lb. delivered to buyer.

		BITUMINOUS.	
Lehigh Lump	$10 75	Briar Hill and Erie	7 50@ ....
Lehigh prepared and car load lots	9 75	Walnut Hill (W. Va.)	6 50@ ....
Lackawanna, Wilkes-Barre and Pittston,*		Midway (West Va.)	6 50@ ....
Grate, egg, and chestnut	9 00	Cannel	8 00@ 9 00
Stove or range	9 50	Blossburg	8 00
		Indiana Block	6 00
		Hocking "Brooks"	6 00
		Wilmington and Illinois	5 00

*75 cents off these prices for car load lots to country dealers and manufacturers.

Cleveland, O.

Oct. 7, 1874.

Reported by our Special Correspondent.

Prices remain same as last quoted. The retail business has improved considerably within the last two weeks. Wholesale trade, however, still remains very dull and unsatisfactory, and shippers look for no improvement during this season of open navigation. Lake freights have an upward tendency on coal West. Owing to scarcity of grain to move and low freights on it East, a great many vessels have cancelled their insurance and laid up for the season.

Per ton of 2000 lb.

Youghiogheny, l'p, f.o.b.	$4 65	Straitsville, f.o.b.	$3 40
Youghiogheny, nut	3 60	Columbiana "	3 40
Briar Hill, (Church Hill)	4 25	Strip Vein "	3 65
" " (Brookfield)	4 10	Mountain Blossburg (blacksmith), f.o.b.	5 75
Massilon, according to quality	$3 40 to 3 65	Darlington and Sterling Cannel, f.o.b.	4 50
Hocking Valley, f.o.b.	3 50	Egg	$6 85
Anthracite, Lackawanna on cars, " " " "		Stove	7 30
" " " "		Chestnut	6 90
Youghiopheny Coke, " "		here	5 50
Connellsville " " " "			5 75

Cincinnati, O.

Oct. 6, 1874.

Specially reported by Messrs. A. BUCHANAN & Co., wholesale and retail dealers in coal and coke.

Prices here continue same as last week. Please continue report.

Per ton of 2000 lb.

	Bush.	Ton.
Youghiogheny, or Pittsburgh, afloat	12 c.	$2 86
Pomeroy coal	9 c.	
Cannel coal	18c.	4 68
Semi Cannel	10 c.	2 60

The following are retail prices delivered:

Youghiogheny	16 c. $3 90@$
Pomeroy	13@14 c.
Cannel	24 c.
Kanawha Semi Cannel	15c.
Anthracite	
Foundry coke	12c.
Soft coke	10c.

Council Bluffs, Iowa.

Oct., 6 1874.

Reported by our Special Correspondent.

Per ton of 2000 lb.

	ON TRACK.		
Blossburg (blacksmith)	$14 00	Wyoming	14 00
Anthracite	15 00	Missouri	6 00
Iowa	4 50	Kansas	6 00
	RETAIL.		
Blossburg	$16 00	Wyoming	$12 00
Anthracite	16 00	Missouri	8 00
Iowa	6 50	Kansas	8 00

Detroit, Mich.

Oct. 6, 1874.

Specially reported by Messrs. ROBINSON & KEYS, dealers in all kinds of coal.

The past week's trade shows a great improvement over any preceding week, and we hope to be able to continue reports of improvement. Prices continue firm at last quotations.

Per ton of 2000 lb.

Lehigh Lump, per ton	$10 50	Blossburg	8 50
Lehigh " prep. sizes	9 50	Briar Hill	7 50
Wilkes-Barre, Grate and Egg	8 50	Willow Bank	7 00
Wilkes-Barre, Stove and Nut	9 00	Erie	7 50
		Massillon	7 00

Denver, Col.

RETAIL PRICES.

Per ton of 2000 lb.

Canon	$6 50	Boulder Valley	$4 75
Marshall	5 50	Euiner	5 50
Murphy	5 50	Black Diamond	5 50
Baker	5 00		

Erie, Pa.

Oct. 7, 1874.

Reported by our Special Correspondent.

Wholesale, per ton of 2,000 lb.

Anthracite f.o.b. vessels.

Lump	$6 60	Stove	$6 65
Grate	6 10	Chestnut	6 05
Egg	6 10		

Bituminous f.o.b.

Briar Hill	$4 40	Beaver	$4 25

Retail, per ton of 2,000 lb.

Anthracite.

Lehigh, chestnut	$8 50@$9 00
" prepared	8 75@ 9 25
Lykens Valley, stove	9 50@10 00
Lykens Valley, chestnut	8 00@ 8 50
Schuylkill and Wilkesbarre	7 50@ 8 00
Blossburg (Smithing)	7 50@ 8 00

Bituminous.

Chenango Valley (Ormsby), lump	$6 00
Mahoning Valley (Briar Hill), "	5 00
Nut, all kinds	4 00
No. 1 slack	3 06
Bituminous, by car loads to factories	5 35

Indianapolis, Ind.

Oct. 6, 1874.

Specially reported by Messrs. H. McCOY & Co.

Quotations remain as follows:

Per ton of 2000 lb.

BITUMINOUS.			
Best Block coal	$2 90	Indiana cannel	6 50
Best Highland	2 40	Hocking Valley	3 00
Block Nut	1 65	Youghiogheny	5 42
Highland "	1 65	Blossburg (smithing)	7 30
Block slack, per car load	15 00	Piedmont "	7 75
Peytona, cannel per ton	8 50	Gas coke, per bushel	9½c
ANTHRACITE (Lackawanna).			
Grate	$8 70	Chestnut	8 60
Egg	8 70	Stove	8 85

Retail, per bushel of 70 lb.

Block	14c.	Peytonia Cannel	32c.
Highland	12	Indiana "	28
Highland Nut	9	Youghiogheny	25
Block "	9	Blossburg	27
Slack	7	Piedmont	30

ANTHRACITE.

per ton.		per ton.	
Grate	$10 50	Stove	$12 50
Egg	10 50	Chestnut	10 50

Louisville, Ky.

Oct. 6, 1874.

Specially reported by Messrs. BYRNE & SPEED.

Continue quotations.

Pittsburgh, per load of 1900 lb	$3 75
Pomeroy	3 25
Buckeye Cannel	5 50
Peytona Cannel	6 00
Nut and Slack	2 75
Kentucky lump, per load	3 25
" nut, "	2 75
" Slack "	1 60
City-made Coke, per bushel	10c
Kentucky on cars at wholesale, per bush.	10c
Anthracite, per ton	$10 to $10 50

Milwaukee, Wis.

Oct. 6, 1874

Specially reported by Messrs. R. P. ELMORE & Co.

Quotations are unchanged.

Retail prices per ton of 2000 lb.

Lehigh Lump	$10 00	Briar Hill, select	$8 50
Lehigh Prepared	10 50	Blossburgh	8 00
Lackawanna	9 50	Pittsburgh	7 50

Mobile, Ala.

Oct. 3, 1874.

Per ton of 2000 lb.

	On Car or at Yard.	Delivered.
Montevallo, Ala., Slack Coal, (screenings)	$3 00	$4 00
New Castle, Ala., Coal	5 00	6 00
Montevallo Lump Coal, screened	9 00	10 00
Pittsburgh Coal, screened	9 00	10 00
Peach Orchard Coal, Red Ash	10 00	11 00
Virginia Cannel	14 00	15 00
English Cannel	17 00	18 00

The above prices are for car load lots of 10 tons and upward.

New Orleans, La.

Oct. 3, 1874.

The supply is fair with a moderate demand. The stock afloat at the Willow Grove coal boat landing, on the 1st of this month, was 172 boats, 4 barges and 1 hull. Consumption during September was 18 boats and 3 barges.

Pittsburgh coal, retail, per bbl	75c.
" wholesale	40@45c.
" to steamboats, per box	60c.
" to manufacturers, per bbl	65c.
Anthracite, retail, per ton	$12 50
" who'sale per ton	$8 50@9 00
Spadra (Arkansas) coal, retail, per bbl	75c.
Mt. Carbon, wholesale, per bbl	45c.
" " retail per bbl	65c.
Scotch Cannel, per bbl	1 00

Pittsburgh, Pa.

Oct. 5, 1874.

Reported by our Special Correspondent.

Prices are as follows:

Per ton of 2000 lb. and Bushel of 76 lb.

	per ton.		per ton
Youghiogheny coal	$2 15	Pittsburgh retail delivered per bushel	9c@10c
" coke	2 75	Anth'cite on cars Lehigh	$7 75
Connellsville coal	2 25	" " Wilkes-Barre	6 75
" coke	3 25		
Pittsburgh coal	2 00		

Twenty-five to fifty cents per ton additional for delivery.

St. Louis, Mo.

Oct. 5, 1874.

Specially Reported by the COLLINSVILLE COAL AND MINING COMPANY.

ANTHRACITE.

Per ton of 2000 lb.

	City delivery.
Lehigh Lump	$13 50
Lackawanna and Wilkesbarre	12 50
Semi Anthracite	9 50

BITUMINOUS.

Per ton of 2000 lb.

	E. St. Louis.	City delivery
Washington Indiana—smithing	$4 00	$4 87
O'Fallon, Ills	2 00	3 00
Collinsville and Belleville, Ills	1 75	2 75
Indiana Cannel	6 00	7 00
Missouri Cannel	....	5 00

Retail, 25c. per ton additional.

Montreal.

Oct. 5, 1874.

Reported by our Specia Correspondent.

Continue quotations.

Per ton of 2,240 lb.

Scotch Steam	$4 50@4 75	Cape Breton Steam	$4 00
Pictou "	4 25	Newcastle Smiths	5 50

Anthracite at retail, 2,000 lb., delivered, less 5 per cent.

Egg	$8 00	Nut	$8 00
Stove	8 50	Chestnut	7 75

Toledo, Ohio.

Oct. 5, 1874.

Per ton of 2000 lb.

Specially reported by Messrs. GOSLINE & BARBOUR.

Retail.		Retail.
Wilkes-Barre and Scranton,	BITUMINOUS.	
Large and Small Egg,	$8 00	Blossb'g and Cumberl'd, $8 00
Stove	8 25	Massillon Lump 6 00
Chestnut	8 00	Briar Hill 7 00
Lehigh Lump	10 00	Straitsville 3 75
		Hocking Valley 4 00

Halifax, N. S.

Oct. 5, 1874.

Reported by our Special Correspondent.

Quotations as follows:

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 50	Little Glace Bay	3 50
Gowrie	3 50	Blockhouse	4 00
Victoria	3 75	Albion (at Railroad)	4 25

Toronto, Ont.

Oct. 5, 1874.

Reported by our Special Correspondent.

The prices and terms of the Toronto Coal Exchange remain as follows:

ANTHRACITE.

per ton.		per ton.	
Broken	$7 65	Chestnut	$7 65
Egg	7 65	Lehigh	9 00
Stove	8 15		

BITUMINOUS.

Blossburgh	7 50	Screenings	5 00
Briar Hill	7 00	Soft Nut	5 50

Rates of Transportation on Anthracite Coal to Tide Points.

*From Mauch Chunk to New York "towing limits," via Morris Canal $2 65

*From Mauch Chunk to Jersey City "for reshipment," via Lehigh Valley R. R. 2 45

* From Phillipsburg to Hoboken "for shipment," via Delaware, Lackawanna & Western R R. 1 34

† From Penn Haven to Elizabethport, Port Johnston and Hoboken, via Central railroad of New Jersey 2 41

‡ From Mauch Chunk to Elizabethport, Port Johnston, Hoboken and South Amboy, via Lehigh Valley R. R. 2 25

From Port Delaware to New York and Jersey City, via Morris Canal 1 74

From Mauch Chunk to Philadelphia via N. P. R. R. 1 75

From Schuylkill Haven to Philadelphia, via canal. Freight 65c., tolls $1 10 1 75

From Tamaqua to Port Richmond "for shipment," via P. & R. R. R. 2 07

From Schuylkill Haven to New York, via canal 2 72

From Upper Lehigh to Jersey City, via Central R. R. of N. J. 3 24

From Tamaqua to Philadelphia, via Phil. & Read. R. R. main line 2 17

On canal coal at Jersey City an additional charge of 20 cents per ton will be made for transferring coal from boat to boat, and thirty cents per ton for placing the same on the wharves and re-shipping.

The rate on coal for way-points on the New Jersey railroads will be $1 15 per ton from Mauch Chunk to Phillipsburg.

* At a recent meeting of the N. Y. and Lehigh Coal Exchange, it was decided to make the price of coal at this point for *way trade* the same, whether shipped via canal or railroad.

* 46 cents additional to this rate is added on coal for consumption.

† The rate from Phillipsburg to these points is 83 cents per ton less. This rate does not include wharfage or shipping expenses at tide ports.

‡ From Penn Haven to these points it is 16 cents additional, and from Phillipsburg the rate is 91 cents less,

Freights on Bituminous Coals from the Mines to Tide-Water Shipping Ports.

From the Mines to Cumberland and State Line (say an average of 20 miles) the charge is 3 cents per ton of 2240 lb. per mile.

From State Line to Amboy, (346 miles) $4 00 per ton of 2000 lb. On coal shipped beyond that point there is a drawback of 50 cents per net ton.

From Cumberland to Baltimore, (178 miles) $2 58 per ton of

2240 lb., or $2 30 per net ton, and 4 cents per gross ton for use of cars.

From Cumberland to Georgetown, (152 miles) by canal, $1 76 per ton of 2240 lb. *To Alexandria, Va.,* 11 cents per ton more.

From the Mines to Piedmont, (from 4 to 10 miles) 5 cents per ton of 2240 lb. per mile on distances less than 5 miles, and 4 cents per ton per mile on distances not over 10 miles.

From Piedmont to Baltimore, (206 miles) $2 97 per ton of 2240 lb., or $2 65 per net ton.

From any point in the Kanawha Valley to the James River wharves below Richmond (say 350 miles) by C. and O. R. R., including terminal charges, per ton of 2000 lb., for Cannel coal, $5 35. Subject to rebate on large quantities.

Do, do., for Semi Cannel or Splint, $3 65.

From Hawks Nest to Richmond (say 300 miles) the freight on Bituminous or Splint is $3 25 per ton of 2000 lb; on Cannelite it is $5 00.

From Irwin to W. Phila. (say 332 miles) per P. R. R. Pelb.
Westmoreland gas coal, per ton of 2000 lb.....$5 00

From Osceola to W. Phila. (say 248 miles) per T. & C. R. R.
per ton bituminous coal of 2000 lb..... 3 55

From Fairmount and Clarksburg to Baltimore (say 300 miles) via B. & O. R. R. including loading, per 2000 lb..... 5 20

On through coal after deducting drawback..... 4 15

From Richmond, Va., to New York, 392 miles per 2000 lb. 2 10
" " " Boston about 650 " "..... 3 00
" " " Philadelphia 292 miles "..... 1 75

From the Mines to Richmond via James River and Kanawha Canal, 15 miles..... 52

Freights.

The rates of freights to river and Sound ports, in sympathy with the general condition of the market, are very irregular, indeed so much so, that we cannot give any quotations which would be at all reliable. The rate to Boston is nominally $1 25. This may serve as a guide to the various points, though the rate may vary either way at any moment. We quote from Baltimore to Boston, nominally, $1 45. From Philadelphia the rates are firmer. Charters have been taken from this point to Boston at $1 60 and to Providence at $1 35. Vessels are in fair supply, though somewhat scarcer. An idea of the general condition of the freight market may be inferred from a comparison of the following rate as compared with that of last year: an engagement of 4,000 tons from Caledonia to New York has recently been effected at $1 75 per ton. The rate last year between the same points being firm at $4 per ton.

Lehigh & Delaware Division Canals.

Until further notice the rates of toll on the above canals will be as follows:

From Maunch Chunk to Easton, 55c. per ton. From Maunch Chunk to New Hope or Bristol, 90c. per ton.

Towing from Bristol to Philadelphia, 7c. per ton.

On local shipments the toll sheets of 1873 will be adopted until further notice.

REVIEW OF THE BRITISH COAL AND IRON TRADES.

Compiled from our Exchanges bearing date to Sept. 26, 1874.

London.—The condition of the British Iron Trade during the week under review, continues to exhibit a gradual improvement. The successful adjustment of the labor difficulties which have so generally existed throughout the country, combined with cheaper wages and fuel, has imparted confidence and vitality to the trade. House coals are firm at a slight advance on our previous quotations, original Hartlepool being quoted at 26/, and from that the various qualities range down to 22/. Manufacturing coal is also firm at an advance.

Cleveland.—Forge iron is in good demand. No. 1 is quoted at 70/; No. 3, 66/. Rails are quoted at £7 15/ to £8 10/, with no business of any moment. Coal is in fair request at a decline from our last quotations, colliery owners preferring to sell rather than allow stocks to increase. Unscreened coal can be delivered in Cleveland at 7/ to 8/ per ton, which leaves the pit price at 5/ to 6/; screened coal is relatively dearer and is sold up to 10/ to 11/ delivered. Coke is held at from 14/ to 15/ per ton at the pit.

North Staffordshire.—Prices of iron are unchanged, crown bars being quoted at £9 15/ to £10, and manufacturers are doing their utmost to maintain these rates, and have refused orders at lower terms, but it is doubtful whether they will be able to improve upon them just yet. At present trade is in a dull, uninteresting condition, such as is not unusual at this period of the quarter. The pig iron market is a little livelier, and while ironstone is in quiet demand, coal is plentiful, and prices have a slight downward tendency. We quote best household coal at the pits at 16/ 8d. per ton. Manufacturing coal delivered by rail has been purchased at 9/ per ton.

South Staffordshire.—The iron trade of this district continues more or less in a condition of suspense pending the adjustment of the wages question, and the definite settlement of the course of prices for the ensuing quarter. The general aspect of business is, however, decidedly healthier than for some time past, and promise is afforded of a steady winter's trade. Several additional blast furnaces on the Dudley side of the district are being relighted, and it is not improbable that by the middle of the next quarter an average number may be blowing. Cinder pig is quoted £3 5/ to £3 7/ 6d., at which rate prices are firmer, and all-mine ranges from £5 5/ to £5 15/ per ton, according to brand. Some few transactions have taken place under exceptional circumstances at as low a rate as £5 per ton. Supplies of pig iron coming into South Staffordshire from other districts are not so large as recently reported. The coal trade is quiet, but improving somewhat as to demand. For Earl Dudley's thick forge coal the rate is 13/ per ton, common thin coal being obtainable at 11/, and in some cases even lower. Coal of the very commonest class is being largely converted into coke for ironmaking purposes, its disposal in this manner being more profitable than in its raw state. Common ironstone is in very quiet demand, and current rates render the working of some of the mines unprofitable under existing conditions.

Lancashire.—All the works in this district are well employed, and iron for prompt delivery can only be obtained with great difficulty. No. 3 foundry pig iron, delivered in the Manchester district, is quoted at from 74/ to 77/ per ton, and forge numbers at from 67/ 6d. to 70/ per ton. Bars are worth about £9 15/ per ton, and other descriptions in proportion. The coal trade continues quiet, but is very much steadier than last week. There have been more inquiries than for some time past, and prices generally are firm. The strike in the Bolton cotton trade being now at an end, the demand from this quarter has been resumed, and sellers in many cases are just now stiffer in their prices than they would be in consequence of the unsettled state of matters in West Lancashire. In the Manchester district, house-coal is in good demand; coal merchants are making inquiries, and are pressing to get their stocks up. Furnace coal is quiet. For good burgy there are fair inquiries, but trade is not brisk, and slack, though not so much pushed in the market, is dull. The average pit prices in the Manchester district run about as under:—Best house coal, 14/ to 15/; seconds, 12/ to 13/ 6d.; burgy, 7/ 6d. to 8/ 4d., and slack 5/ 6d. to 6/ 6d. per ton. For gas coal there is a continued good inquiry, and prices are firm; there is also a good inquiry for shipping orders, and in some cases rates have been slightly advanced. Good Lancashire steam-fuel, delivered at Garston, is worth from 11/ to 12/ per ton, and at Liverpool 11/ 6d. to 12/ 6d., and 13/ per ton.

Durham.—The iron and coal trades have now regained that steadiness which they had lost when the strike of miners appeared probable. There is a fair demand both for coals and pig iron. We quote the latter at 65/ per ton. Small coal is now quite a drug in the market and is sold at from 3/ to 4/ 6d. at the pits. Some kinds of unscreened coal are as low as 5/ to 6/ at the pit. Household coal 13/ to 16/ at the pit, according to quality. Coke, 16/ to 18/, delivered on Teesside.

Cardiff.—We are able this week to report a more decided improvement in our iron trade, but prices remain at the last figures given. Some few sales of iron ore have been made, and we look for a steady demand for this article very shortly. The price of steam coal remains firm at quotations given last week, and an improved tone we can report in the house-coal market. The demand for coke is very quiet, and prices are easy.

Glasgow.—The warrant market has exhibited an improved tone this week, and prices at one time were 4/ per ton above the closing price of last week. This has been occasioned by a steadily increasing demand for shipment, mainly to the Continent, though there is also more inquiry for iron on Canadian and United States account. No. 1 Gartsherrie, Coltness, and Langloan have been advanced 5/ per ton, and are now 112/ 6d. per ton for the two first, and 110/ for the last; other brands have been raised from 2/ to 4/ per ton. The shipments of pig iron from Scotland last week show a considerable improvement, being, foreign, 10,202 tons; coastwise, 4024 tons; total, 14,226 tons, against 8364 tons in the corresponding period of last year. Those who make rods are specially well supplied with orders for India and China. There have been considerable reductions in the price of coals this week, best households being down 2/, and are now 16/ to 17/ 6d. per cwt., delivered. Steamboat coals have been reduced from 1/ to 3/ per ton; cross, 6d. per ton; Matling coke, 7/ per ton; Binichil coke, 10/ per ton.

IRON MARKET REVIEW.

Import Duties.

The following are the duties in Gold on Iron:

Flat Iron, not less than 1, nor more than 6 inches wide, nor less than ⅛, nor more than 2 inches thick. *Round Iron,* not less than ¼, nor more than 2 inches in diameter, and *Square Iron,* not less than ¼, nor more than 2 inches square ₱ lb. 9-10 of 1c.

Flat Round or Square Iron, of larger or smaller sizes than the above mentioned, per lb 1 35-100

Provided, that all iron in slabs, blooms, loops, or other forms, less finished than bars, and more advanced than pig iron, except castings, shall pay the same as iron in bars.

Provided, that none of the above iron shall pay less than 31½ per cent.

Railroad Iron.....63c. per 100 lb.
Boiler plates, or other plate iron not less than 3-16 of an inch thick, per lb..... 1 35-100 c.
Scrap castings per ton..... $5 40
" *wrought* " " 7 00
Pig iron per ton..... 6 30
Iron ore 10 per cent. *ad valorem.*

New York.

Oct. 9, 1874.

It is generally conceded that we will see no great improvement in the Iron trade before Spring. The season is advancing, and no better prospects have developed themselves in this market. Prices are entirely *no min'l,* for a cash offer will get iron at almost any price.

AMERICAN PIG.—We hear of sales of 3,000 tons of Lehigh irons to the Phillipsburgh pipe foundries on private terms. We quote: No. 1, $28@29; No. 2, $26@27; Forge, $24@25.

SCOTCH PIG.—The stock of Scotch Pig is very low, and prices are fully maintained at $38 for Eglinton; Glengarnock, $40. Sales are very limited, and though more iron is arriving, it is mostly sold before landing. From Scotland we learn by recent telegrams that prices have still further advanced, now standing: Eglinton, 96/, Glengarnock, 107/ 6d., Coltness and Gartsherrie, 118/. Coltness and Summerlee are not obtainable from makers before November. Eglinton is also quite scarce, and as there is a large foreign demand, the prices of Scotch irons are likely to be well maintained, if not advanced, for some time to come. The stock of iron in store in Glasgow is very low, being but 18,709 tons as against 41,211 tons same date last year, and as it is mostly No. 3, it is impossible to make up any quantity of warrants which are composed of 3-5ths No 1, and 2-5ths No. 3. This also explains the great scarcity of No. 1.

RAILS.—There have been no transactions during the week, and prices are quite nominal. We quote $55 at the works for iron, and $80 for steel. Where higher figures are obtained, it is by granting extraordinary credits.

OLD RAILS.—No transactions and no inquiry. We quote, nominally, $30@32.

SCRAP.—The sales during the week amount to about 1,000 tons. One lot, 525 tons, ex yard, sold at $27 50. We quote, nominally, $27@·13

Boston.

From the *Commercial Bulletin* of Octobber 3.

Pig is without a precedent for its present listlessness. The sale of a five or ten ton lot to half a dozen near-by foundrymen seems to embrace all the business of the week, but the prices, as two of the sellers quote it, "are altogether too low to print."

Bar is selling a trifle better to blacksmiths and machinery jobbers, at the basis of 3c. per pound. We notice a fair demand this week for boiler plates and flues which are going to repairs, and the placement of several orders for boiler iron on new work. In the fine grades of Yorkshire iron, such as the Taylor and Lowmoor, prices are well maintained, for the reason that the manufacturers had not advanced to the full limit, and feel little disposition now to concede anything. Lots from store are quoted at 11c.

Steel is very slow, and 9½@10c. is the going value on machinery. English tool steel is firm at 17½c. out of store, and 17c. on orders.

Chicago

Oct. 6, 1874.

Specially reported by Messrs. ROGERS & Co., dealers in Scotch and American pig iron.

Quotations remain as follows:

No. 1 Coltness	$46 00@	....
No 1 Gartsherrie	45 00@	....
No. 1 Summerlee	44 00@	....
No. 1 Glengarnock	42 00@	....
No. 1 Eglinton	40 00@	....
Warner's "American Scotch"	41 00@	....
Massilon No. 1 Foundry	37 00@	....
No. 1 Grand Tower Mo. ores (Bituminous)	35 00@	....
No. 2, " " "	32 00@	....
No. 1 Mill	31 00@	....
Union "A" 1 (Anthracite)	34 00@	....
Union "B" 1 (Anthracite)	32 00@	....
No. 1 Lake Superior (charcoal)	36 00@	....
No. 2 Lake Superior "	34 00@	....
No. 3 Lake Superior "	36 00@	....
No. 4 Lake Superior "	42 00@	....
Bessemer Steel Rails	90 00@95 00	
New Iron Rails	55 00@	...
Old Rails	28 00@	....

Cleveland.

Oct. 6, 1874.

Specially reported by Messrs. C. E. BINGHAM & Co., dealers in pig iron and iron ore

Quotations remain as follows:

No. 1, Anthracite Foundry	$.... @	....
No. "	.... @	....
No. 1, Bituminous "	31 00@	...
No. 2, " "	29 00@	....
No. 1, " Gray Forge	27 00@	....
No. 1, Massilon Black Band	36 00@	....
No. B-1 " "	34 00@	....
No. 2 " "	32 00@	....
No. 1, Lake Superior Charcoal	33 50@	....
No. 2, " "	32 50@	....
No. 3, " "	31 50@	....
No 4, " "	37 00@	....
Nos. 5 and 6 "	38 00@	....
American Scotch, No. 1, Cherry Valley	35 00@	....
" " No. 2	32 00@	....

Cincinnati.

Oct. 6, 1874.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

The tone of the market is not satisfactory, and the prospect for a decided improvement still remote. We quote:

CHARCOAL.			
Hanging Rock, No. 1, Foundry	$33 00@	....	—4 mos
" No. 2, "	30 00@	31 00	—4 mos
" Mill	27 00@	29 00	—4 mos
Tennessee No 1, Foundry	30 00@	31 00	—4 mos
Tennessee. No. 2 "	29 00@	30 00	—4 mos
" Mill	27 00@	....	—4 mos
Missouri, No. 1, Foundry	33 00@	34 00	—4 mos
STONE COAL.			
Ohio No. 1, Foundry	30 00@	....	—4 mos
" No. 2, "	29 00@	30 00	—4 mos
Ohio Mill	27 00@	28 00	—4 mos
Missouri, No. 1, Foundry	30 00@	31 00	—4 mos
" No. 2, "	29 00@	30 00	—4 mos
" Mill	27 00@	28 00	—4 mos
CAR-WHEEL.			
Hanging Rock, C. B.	50 00@	55 00	—4 mos
Tennessee "	45 00@	48 00	—4 mos
Missouri "	45 00@	48 00	—4 mos
Alabama "	45 00@	50 00	—4 mos

BLOOMS.

Charcoal	80 00@	90 00	—cash

SCRAP IRON.

Cast	80@	90	—cash
Wrought	1 25@	1 40	—cash

Indianapolis, Ind.

Oct. 5, 1874.

Specially reported by NELSON KINGMAN, broker and dealer in pig iron, etc.

Present quotations are as follows:

New Rails at mill	$62 00@64	00	
Old Rails "	30 00@31	00	
Hanging Rock Charcoal Pig No. 1 foundry	35 00@36	00	—4 mos
" " " " " 2 "	32 00@33	00	—4 mos
" " " Mill	29 00@31	00	—4 mos
STONE COAL.			
Indiana No. 1 Foundry pig Planet furn'e.	32 00@34	00	—4 mos
" 2 " " "	31 00@32	00	—4 mos
" 1 Forge " "	29 00@	....	—4 mos
" 2 " " "	27 00@	....	—4 mos
Ohio No. 1 Foundry pig	33 00@34	00	—4 mos
" 2 "	31 00@32	00	—4 mos
" 1 mill	28 00@30	00	—4 mos
Merchant Bar, card rates	60 00@62	00	—3 mos
1st quality C. H. No. 1 Boiler Plates, per lb	5¾@6	c.	—3 mos
1st " Com Sheet, for No. 24, W.G. "	5	c.	—3 mos
1st " Charcoal Sheet " " "	6	c.	—3 mos
Best Bloom Galvanized Shee', discount 20 per cent			—cash.
2d quality " " " 30 "			—cash.

f. o. b in Indianapolis.

Louisville.

Oct. 6, 1874.

Specially reported by GEORGE H. HULL, Esq.

The market is dull but without quotable change. The usual time, 4 months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.

No. 1 foundry, from Hanging Rock ores	$30 00@33	00	
No. 2 " " "	28 00@29	00	
No. 1, forge, " "	26 00@27	00	
No. 1, foundry, " Tennessee "	28 00@30	00	
No. 2 " " "	27 00@28	00	
No. 1, forge, " "	26 00@27	00	
No. 1, foundry, " Alabama "	28 00@30	00	
No. 1 " " Iron Mountain "	32 00@34	00	
HOT BLAST—STONECOAL.			
No. 1, foundry, from Missouri ores	30 00@33	00	
No. 2, " " "	28 00@29	00	
No. 1, forge " "	28 00@30	00	
COLD BLAST—CHARCOAL.			
Car Wheel from Hanging Rock ores	50 00@54	00	
" " Tennessee "	45 00@46	00	
" " Alabama "	48 00@50	00	
" " Georgia "	48 00@50	00	
" " Missouri "	45 00@46	00	
" " Kentucky "	45 00@46	00	

Milwaukee, Wis.

Oct. 6, 1874.

Specially reported by Messrs. R. P. ELMORE & Co. Continue quotations.

Per ton of 2,240 lb.

Scotch ranges	$40 00 to	$45	00
No. 1, Lake Superior Charcoal	36 00 to	38	00
" 2, " "	34 00 to	36	00
" 1, " " Anthracite	35 00 to	36	00
" 2, " " "	33 00		

Pittsburgh, Pa.

October 4, 1874.

Specially reported by A. H. CHILDS, Esq., commission merchant for the sale of pig iron, blooms, ore, &c.:

There is no improvement to report in this market.

The long hoped for advance in Pig Iron is, to all appearance, as remote as ever, and purchases are made strictly for immediate wants.

Quotations are as heretofore.

No. 1 Foundry, anthracite or bituminous	$28 00@29	00	—4 mos
No. 2. " " "	27 00@28	00	—4 mos
Gray forge " "	26 00@26	50	—4 mos
White and mottled " "	24 00@25	00	—4 mos
Hot blast charcoal	33 00@38	00	—4 mos
Cold " "	40 00@50	00	—4 mos

From the *American Manufacturer*.

PIG IRON.

WEDNESDAY, Oct. 7, 1874.

The most important feature we have to record is that business during the past week was somewhat better, the volume of business reported having been larger than for some time past; however, the sales were mostly in small lots, ranging from 10 up to 100 tons, which indicates that consumers are determined to carry just sufficient stock to supply their immediate wants and no more. The general tone and spirit does not differ from what it was at the date of our last review, and while it is not any better, there is comfort in the fact that it is no worse, and the general impression appears to be that when there is a change it will be for the better, as it is generally conceded that hard pan has been reached so far as regards prices, and as the mills generally, in view of the very light purchases during the past couple of months, must be almost bare of stock, we look for an increased demand soon, although indications just now are that the hand-to-mouth policy will be adhered to during the balance of the year, as manufacturers, without an exception, are determined to pursue a very conservative course. Prior to the panic it was nothing unusual, indeed it was very common, for the mills to carry from thirty to sixty days' stock ahead, but now they are buying just enough to keep them going and no more; however, as they (the mills) are all in operation, many of them working double turn, we look for an average consumption of pig, and notwithstanding the demand is restricted wholly to supplying immediate wants, there will be a very fair business in the aggregate. In regard to prices there has been no recent change, and while some producers are still hopeful of an early advance, operators, so far as our knowledge extends, do not anticipate any material change either way between now and the first of the year. As the market now stands the consumer has the best of it, as he has a slight margin for profit, while the producer has none whatever; on the contrary, current rates, so it is said, do not cover actual cost.

MANUFACTURED IRON.

There is but little that is really new or important to record in regard to finished irons; while there is an absence of excitement or bustle, and while the orders coming forward are not as large as they usually are at this particular season, as both jobbers and consumers are carrying small stocks as compared with former years, yet the mills are, with one or two exceptions, all in operation, the majority of them working double turn, and there is not much doubt that this will continue to be the situation during the balance of the year. The fact that the recent advance is adhered to, securing a fair margin for profit, has imparted a much better feeling, and manufacturers have the satisfaction of knowing that even if they should not turn out as much iron during the last half as they did in the first half of the year, they will make more money. While so far as we can learn there is a very fair demand for all the different kinds, the inquiry for sheet iron continues active, and some of the mills report that they have sold considerably ahead of their production. We continue to quote on the basis of a three cent. card for merchant bars, which brings the actual selling price down to two cents and eight-tenths.

STEEL.

There is a continued fair degree of activity manifested in this branch of business, but so far as we are aware, it is devoid of any new or important features worthy of special notice. As noted in our last review it is complained that prices have been reduced to a point that affords a very slight margin for profit—lower, it is said, than there was any necessity for.

Pig metal sales reported for the *American Manufacturer* for the week ended October 7, 1874.

BITUMINOUS COAL SMELTED FROM L. S. ORE.

50 tons A. 1 foundry	$29 00	—4	mos
50 " B. 1 foundry	28 00	—4	mos
20 " No. 1 foundry	28 00	—4	mos
30 " No. 2 foundry	27 00	—4	mos
220 " gray forge, open, R. S.	27 00	—4	mos
300 " gray forge, R. S.	26 50	—4	mos
130 " gray forge	26 00	—4	mos
420 " white and mottled, N.	24 00	—4	mos
COKE.			
30 tons No. 1 foundry, Connellsville	$28 00	—4	mos
10 " No. 2 foundry, Connellsville	27 50	—4	mos
200 " gray forge, N, Connellsville	26 50	—4	mos
100 " gray forge, N.	25 50	—cash.	
200 " gray forge, Allegheny, Red Bank	28 00	—time	

NOTE.—In our reports very little of the iron made in the city is included, as in most instances the parties owning the furnaces use the iron in their mills. This will add from 3000 to 3500 tons per week to our report.

METALS.

NEW YORK, Oct. 9, 1874.

Gold Coin.—During the week past, gold has ranged from 109¾ to 110⅛, and closed yesterday at 110.

Bullion.—Fine silver bar is quoted at $1 25⅛@$1 26⅛, gold, per ounce, and fine gold bar at par ($20 67, gold, per ounce.)

Copper.—The copper market is exceedingly firm and prices are advancing. The sales during the week have amounted to nearly 1,000,000 lb. The prices have varied from 21⅛ to 21⅜, and may be quoted now at 22 cents, while for future delivery after December much higher prices are named. Baltimore is quoted 22 cents. In the foreign market copper has advanced considerably, and telegrams of yesterday quote Chili bars in London, £83. Best selected, £93.

Messrs. VIVIAN, YOUNGER & BOND report from London, under date 25th September, as follows:

"At the Swansea Ticketing on Tuesday last, 2,296 tons British and Foreign ores sold at an average of 14/ 11d. per unit of produce, for an average produce of 13¼ per cent. Cape Ores of 26¾ per cent realizing 15/ 9d. per unit.

"Chili bars have been in active demand during the week, and a further advance of 20/ to 30/ has been established. About 800 tons picked brands sold at £80, and a considerable business was done in good ordinary at from £78 15/ to £80 spot and for arrival. The market closes firm with buyers at £80.

"A cargo of Chilian ores sold at 15/ 6d. and part cargo of Regulus at 15/ 9d. per unit, and at the close about 2,000 tons are reported as bought on speculation at the same figure, chiefly to arrive.

"In Fine Foreign a moderate business at £89 to £89 10/ for Wallaroo, and Burra Cake £87 10/ to £88.

"English unmanufactured commands full rates for early delivery, with sales at £86 to £87 for Tough, and £88 to £89 for Best Brands."

Lead is in fair demand, and prices are somewhat advanced, possibly owing to the fact that the Government has disposed of all the lead it had at this point, and cannot deliver any more before next Thursday. The price may now be quoted at $6 25 to $6 30, gold. It is possible, Government may still further advance the price. The market is now firm, with quite a moderate demand from consumers. We do not hear of any further arrivals of Western lead, but the present prices would leave a margin for the shippers. Foreign is quoted 6¾c., gold.

Spelter and Zinc.—There is a moderate demand, and prices are fully maintained at 6¾c. for domestic spelter; Silesian has advanced ¼c. Sheet zinc is scarce, and but little has been sold. We quote 8¾c., gold; Mosselman, 9c., gold.

Tin.—The market is dull, and transactions without interest. We continue to quote 21¾@21¾c. for Straits; L and F, 21¾c.; Banca, 25½c., gold, with no prospects of much improvement at present. Our foreign mail advices of the 26th say: "With a few sales of Straits at 93/ spot and 92/ 6d. to arrive, the market became dull and inactive, and closes at 91/ 6d. sellers, steamer named. Australian has declined from 91/ 6d. to 90/, with sellers thereat. English has sold at 97/ down to 95/ for common Ingot."

Antimony—We have sales of 5 tons of Arkansas Antimony at 12c., while foreign is quoted at 11½c. This domestic metal is stated to be a very superior article, and worth more than the imported antimony. In this Journal, vol. XVII., p. 386, we gave a description of this new source of supply, and as this is the first appearance of the product of these mines in this market, it is worthy of note.

Quicksilver.—The price at San Francisco is quoted at $1 45. In London, it is quoted nominally £23 per flask (75 lb.) The New York market is a very limited one, and it may be quoted at $1 60@1 65.

Manganese.—The market is well supplied with the common qualities from 33 to 70 per cent., and a large lot of New Brunswick Manganese, sent to England, a part of which has been returned, as but £12 10/ were offered there, and over 100 tons are still in Liverpool unsold. The low grade manganese from New Jersey is said to be purchased by steel manufacturers, which is a great mistake. The gray New Brunswick yielding 70 per cent. is very scarce. Georgia manganite sells for 4½c.

San Francisco Stock Market.

BY TELEGRAPH.

NEW YORK, October 8, 1874.

Our report from the San Francisco Stock Board is dated the 6th inst. The market has shown considerable activity during the week with a downward tendency, Savage being the only prominent exception, having advanced $5¾ per share during the operations of the week. Yellow Jacket has declined $11 since our last, indeed there is plenty of margin for a still further decline in this item without affecting stockholders who purchased two months ago. Chollar is the most noteworthy feature in the report, our quotations placing it $13 lower than last week. The report is as follows:

Savage	86⅛	Imperial	10
Crown Point	63	Raymond & Ely	17
Yellow Jacket	110	Meadow Valley	7
Kentuck	21	Eureka G. V. Bid	—
Chollar Potosi	71½	Ophir	—
Gould & Curry	28	Hale & Norcross	—
Belcher	66¾	Consolidated Virginia	92

Boston Stock Market.

BOSTON, October 8, 1874.

The following quotations from the Boston Stock Market exhibit an irregular feeling as compared with our last. Calumet and Hecla is the only item on the list that has exhibited sufficient animation to merit the basis for transactions. Small sales of this stock were effected yesterday at from $131 to $132 per share.

Allouez	6⅛	Pewabic	—
Calumet and Hecla Co.	133	Phœnix	—
Copper Falls	10	Quincy	33¾
Central	—	Ridge	5⅜
Franklin	—	Rockland	—

Miscellaneous Stocks.

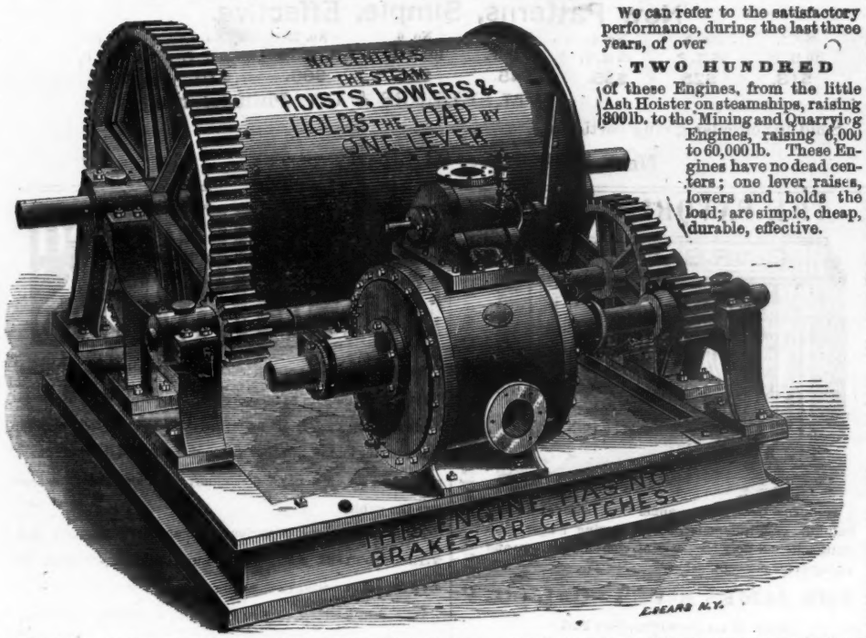
NEW YORK, Oct. 9, 1874.

The following list, with but few exceptions, exhibits a decline as compared with our last. The markets at both the Philadelphia and New York Boards have been very irregular. A slight advance is noticeable in the Delaware and Hudson Canal Company, also the Lehigh Valley and Catawissa Railroads, these being the only exceptions to a decline of the list. The operations during the first part of the week continued on the extensive scale noted in our last. The dealings, however, for the last three days show a decided falling off, closing yesterday with an unsettled market at both the Boards. The following dividends are announced as payable on the 20th inst.: Delaware, Lackawanna & Western R. R., 2½ per cent.; Philadelphia and Reading R. R., 2½ per cent.; Central R. R. of New Jersey, 2½ per cent. The Lehigh Valley R. R. has declared a dividend of 2½ per cent., payable on the 15th inst.

	Bid.	Asked.
*New Jersey Central R. R. Co	103¾	104
American Coal Co	—	61
Maryland Coal Co	19	21
Pennsylvania Coal Co	245	250
Quicksilver Mining Co. Preferred	38	38½
Reading R. R. Co	54⅜	54¾
Delaware and Hudson Canal Co	116	—
Lehigh Coal and Navigation Co	46⅜	46¾
Lehigh Valley R. R. Co	61¼	61⅜
Catawissa Preferred	43	43¾
*Delaware, Lackawanna & West. R. R. Co.	107⅛	—
Consolidated Coal Co	46½	—
Little Schuylkill R. R.	47¼	47¾
Huntington & Broad Top R. R. prefrd.	12	13½
St. Louis & Iron Mountain	—	18
Morris Canal Preferred	110	114
Susquehanna Canal	6	19

* Ex-dividend.

ROTARY REVERSIBLE HOISTING ENGINES.



We can refer to the satisfactory performance, during the last three years, of over

TWO HUNDRED

of these Engines, from the little Ash Hoister on steamships, raising 800 lb. to the Mining and Quarrying Engines, raising 6,000 to 60,000 lb. These Engines have no dead centers; one lever raises, lowers and holds the load; are simple, cheap, durable, effective.

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100,000 TICKETS! 20,000 GIFTS!

This is the last Concert of the series. Four have already been given and nearly **Two Millions and a Half** distributed among the ticket-holders. In the First Concert the principal gift, of $35,000, was drawn by Jno. R. Durff, of Memphis, Tenn., now a resident of New Albany, Ind. In the Second it amounted to $75,000, and went to a club at Columbus, Ind., gotten up by Mr. T. C. Burgess. In the Third Concert, the first Gift of $100,000 was drawn by Mr. L. H. Keith, of Kingston, Mass. In the Fourth Concert, Memphis was again the lucky holder of the ticket which drew the Capital Prize of $187,500, which was distributed among various clubs and individuals in that city.

In the Fifth and Last Concert, which comes off on the 30th of November next, the principal Gift will be $250,000, and it waits only the turning of the wheel of fortune to ascertain the fortunate possessors of the lucky numbers which will entitle the holders to such fortunes as $250,000, $100,000, $75,000, $50,000, $25,000, etc. Twenty thousand gifts, from $250,000 down to $50, will be distributed by lot among the ticket-holders.

Whole Tickets, $50; Halves, $25; Tenths, $5. 11 Whole Tickets, $500.

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Agent and Manager.

American Institute of Mining Engineers.

OFFICIAL BULLETIN.

Announcements to Members and Associates.

I. The ENGINEERING AND MINING JOURNAL, which is the Organ of the Institute, and contains its proceedings, transactions and notices of meetings, will be sent to each Member and Associate on the payment of his annual dues. Back numbers cannot, as a rule, be sent.

II. Dues (ten dollars per annum) are payable on election and at the annual (May) meeting. Members and associates elected at the February meeting pay ten dollars only to May of the following year. Remittances should be made, as far as possible, by P. O. Order, payable to the Secretary.

III. The October meeting of the Institute will be held at Hazleton, Pa., beginning Tuesday evening, 27th inst. The following members of the Institute compose the local Committe, of Arrangements: Messrs. E. B. COXE, Drifton; T. S. MCNAIR, Hazleton; and W. J. HARRIS, Ebervale. Members are requested to give the Secretary the titles of their papers in advance of the meeting if possible.

THOMAS M. DROWN, Secretary, Lafayette College, Easton, Pa.

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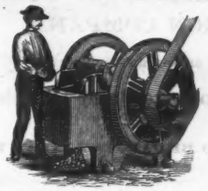

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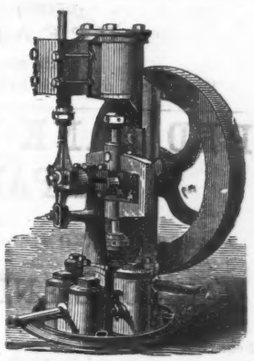

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Analysis of Average New Bed Pure Ore.		*Analysis of No. 1 Bessemer Pig.*	
Metallic iron	68. 24	Undetermined matter and loss	.134
Oxygen with the iron	26. 01	Silicon	1.019
Water	. 38	Carbon	3.821
Insoluble Siliceous matter	4. 32	Phosphorus	.048
Sulphur practically none.		Sulphur practically none.	
Phosphorus	.038	Calcium	.140
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Lime	.14		100.000
Undetermined matter and loss	.592		
	100.000		

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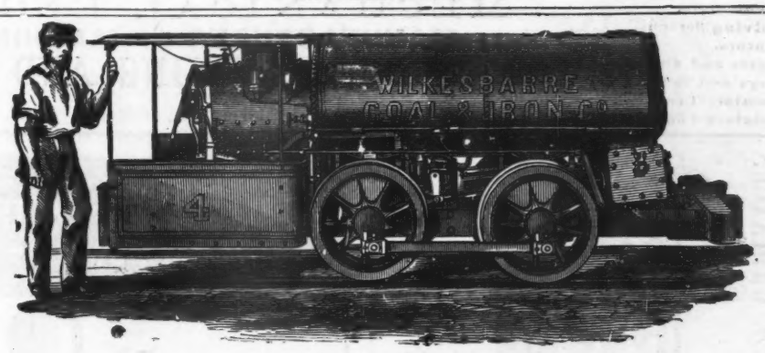

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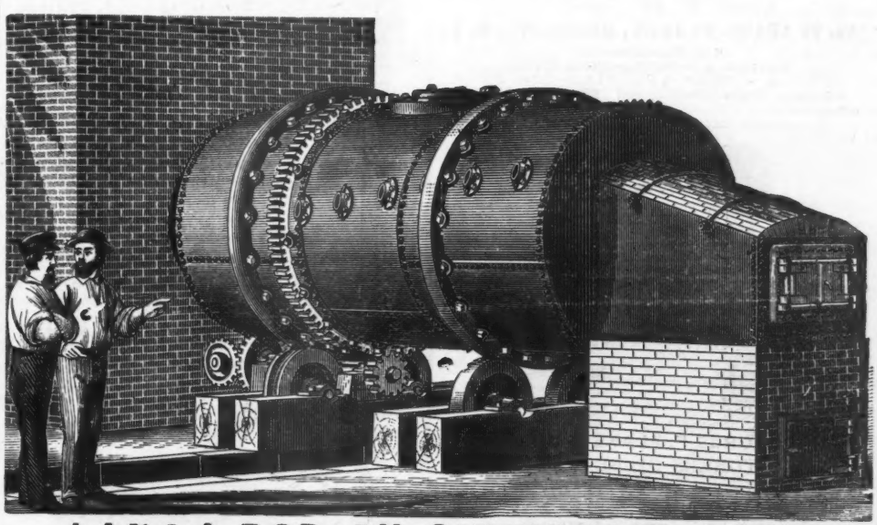

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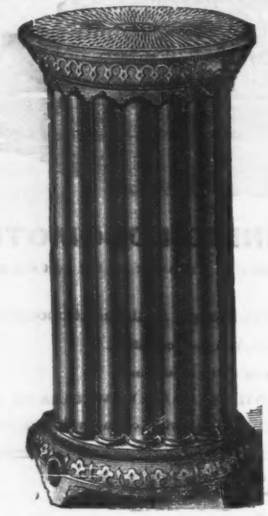

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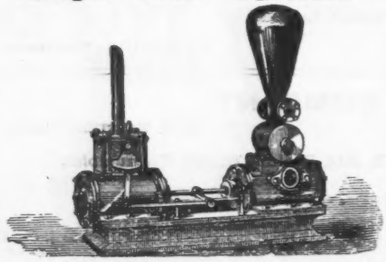

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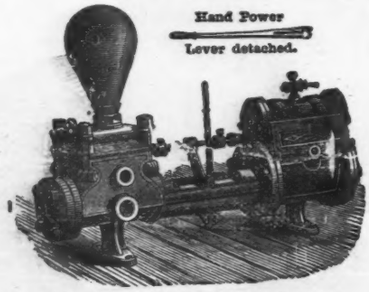

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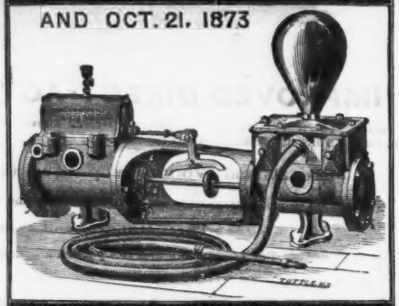

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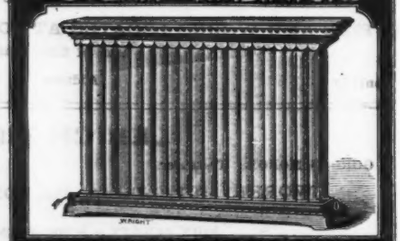

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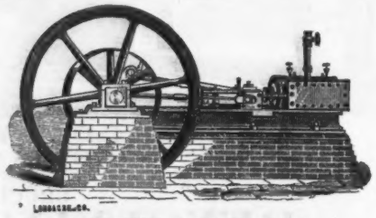

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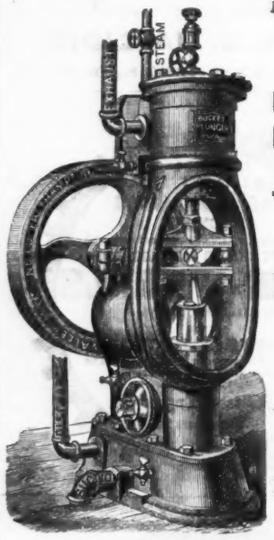

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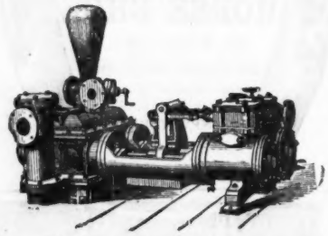

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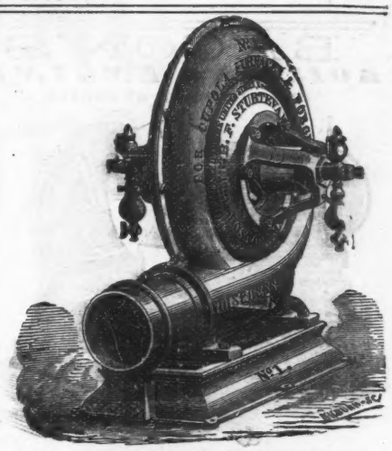

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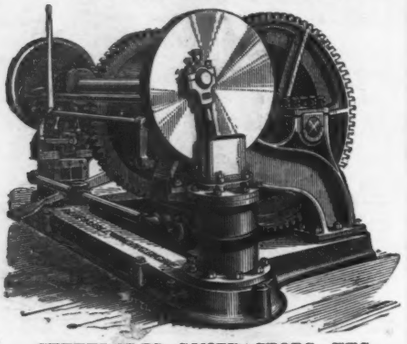

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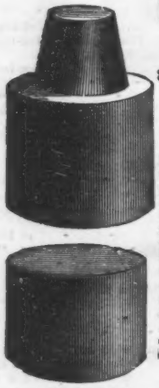

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☞ Look at following extract, Ingersoll Co.'s letter of excuses, ENGINEERING AND MINING JOURNAL, June 6, and compare with their advertisement: "I had *two* drills at the mine from the commencement, one beginning work on the 4th of April, the other on the 7th of the same month, and both drills working until the 1st of May." Signed, C. N. ELLIOTT, Superintendent Ingersoll Rock Drill Co.
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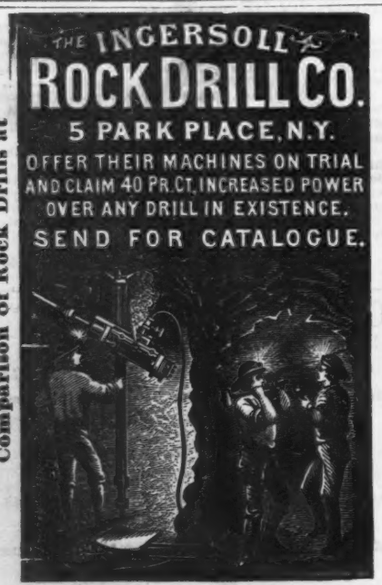
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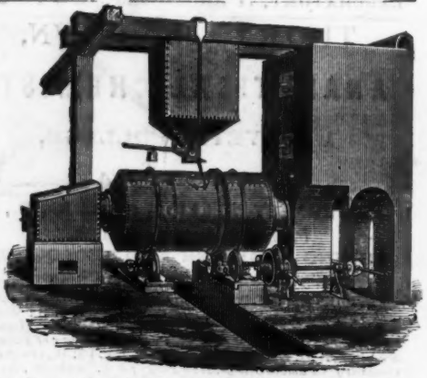

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